





## Editorial Notes.

### PORTRAIT OF J. C. BROUGH.

WE present with this number a lithographic portrait of our late valued friend Mr. John Cargill Brough, for ten years editor of this journal. The likeness is very striking, and to ourselves, and to many of our readers the portrait will be a memorial which will ever be treasured sacredly. We have had a few of the first impressions taken from the stone on India paper, mounted and framed in a suitable manner. These we will supply at half a guinea each, but the number at our disposal is very limited, so that friends wishing to possess one of these pictures will please write to us without delay.

### MR. STODDART ON STUDY.

YOUNG men who are preparing for their life work, will do well to read and read again the address delivered to them by Mr. Stoddart, which we publish. No lecturer could have been chosen whose sympathies were more thoroughly in accord with the student class, and whose advice to them was sure to be practical, serviceable and cordial. We shall not expatiate on the lecture, for it stands in print ready to speak for itself. But there is one passage which is so sensible and important, that it will not be waste of space to print it twice. Urging the desirability of a systematic arrangement of studies, Mr. Stoddart advised his audience to "draw up a tabular arrangement according to circumstances. Botany on one day, chemistry for another, materia medica for the third, and stick to it. If you are prevented from enjoying the half-hour allotted to Bentley, pass it over and work with Atfield on the appointed day, but never upset the arrangement." Hard study does not come pleasant to every one as it does to Mr. Stoddart. Many men would sooner seek the bubble reputation in the cannon's mouth than in the weary, dusty, irksome path of painful study; for weary, irksome, painful, it certainly is to some persons, and to such Mr. Stoddart might as well lecture on the charms of toothache as in glowing language depict the fascinations of patient investigation. Nevertheless, to such we speak. They were not at Bloomsbury-square, for their interest was not there. And we echo only three words of the address we have quoted, "Stick to it." Whatever be the duty of the hour, be it study or ill-making, investigation, or money-making, whether it be irksome or pleasant to you, always remember these three words, "Stick to it," and act upon them.

We have one complaint to make of Mr. Stoddart's address, which is that he must needs go out of his way to quote Kingsley. Mr. Kingsley is a vigorous writer, and sometimes an amusing one, but it will be a bad day for us when we are all his disciples. This was the passage to which we were created:—

"A walk without an object, unless in the most novel and lovely scenery, is a poor exercise, and as a recreation utterly ill. If we wish to do our children any good, we must give them an object in every walk. We can teach them to find wonders in every insect, sublimity in every hedgerow, and by teaching them to make full use of the limited sphere in which they now are, to make them faithful in a few things, that they may be fit hereafter to be rulers over many."

In spite of Messrs. Kingsley and Stoddart we assert that a walk without an object is sometimes a very necessary recreation. And we may add also that Mr. Kingsley's model ant seeking "wonders in every insect, and sublimity in

every hedgerow," would be the most unpleasant little cad in existence. Stick to it by all means at the proper times, but do not ride your hobby in such a wild sort of way as to become an annoyance to all your neighbours.

### THE REGISTER.

READERS of this journal are scattered about all over the world, and a few of them will probably find their names in the Index Expurgatorius, which has been sent to us by the Registrar, and which seems to us of peculiar importance. Every reasonable notice has been given, and these names will shortly be erased from the register unless their owners prove their existence. We believe that we ourselves first called attention to the exceeding incorrectness of the register, and we are very glad to see this energetic attempt to weed it and to present a list as free as may be from inaccuracies. The insertion of these names has crowded out our remaining reports of papers from the Pharmaceutical Conference, our Medical Gleanings and several other matters, which will have due attention hereafter.

### LOCAL ANALYSTS UNDER THE ADULTERATION ACT.

THE new Adulteration Act, which we printed last month, provides for the appointment by certain local authorities of "persons possessing competent medical, chemical, and microscopical knowledge, as analysts of all articles of food, drink, and drugs," which require such attention. These analysts are to be paid "such salary or allowances as they (the authorities) may think fit." The appointment will be worth having if only for the position, but the question has arisen whether the words specifying that candidates must possess competent "medical" knowledge would not exclude mere chemists and druggists. Instructed by the Pharmaceutical Council, therefore, Messrs. Flux and Co., the solicitors, submitted a question to the Attorney-General, the Solicitor-General, and Mr. Langley, and the answer obtained was perfectly satisfactory to our body. We append both question and answer:—

#### Question.

"Whether the words medical, chemical, and microscopical knowledge in the Act 35 and 36 Vict. cap. 74 must be read and construed to limit the choice of analysts so that only duly qualified medical practitioners can be appointed, or whether the question whether the elected person does possess competent medical, chemical, and microscopical knowledge is not one of fact to be considered by the appointors (subject to the approval of the Secretary of State) without reference to any register of medical practitioners or Pharmaceutical Chemists or Chemists and Druggists or the roll of membership of any body of Microscopists.

#### Opinion.

"We have considered this case and the Acts of Parliament referred to in it, and we are of opinion that the words "medical, chemical, and microscopical knowledge" in the 5th section of the 35 and 36 Vict. cap. 74 are not to be construed so as to limit the choice of Analysts within that section to duly qualified Medical Practitioners only. We are further of opinion that the second branch of the question submitted to us must be answered in the affirmative.

"J. D. COLERIDGE,  
"G. JESSEL,  
"A. G. LANGLEY."



## LARGE DOSES OF MORPHIA.

THE *Pharmaceut. Zeit.* records a curious fact about morphia doses. A young girl, suffering with inflammation of the knee-joints, had morphia prescribed to alleviate her pains. The first day she took 1 grain per dose, a little later 2, 3, and 6 grains, after a fortnight 9 grains, again a week later 12 grains, then 15 grains, till the dose increased to 30 grains *pro die*. At last the following prescription was presented: Morph. acet., ʒij.; Sacchar. alb., ʒj. M. f. p., divide in six equal parts. These powders were seven times repeated. A few days before her death she took 60 grains of morphia a day. When she died, she had consumed ʒiij. ʒj. of morphia. We are not responsible for the truthfulness of this report.

## UNIVERSAL PHARMACOPŒIA.

ANIMATED by the idea of securing uniformity in pharmaceutical preparations all over Europe, Dr. Phoebus, of Giessen, conjointly with some other chemists and pharmacists of high standing, privately undertook, in 1869, to draw up an international pharmacopœia. Among the active workers in this enterprise we may name Signor Cantini, Naples; Herr Flückiger, Berne; M. Planchon, Paris; Herr Schneider, Vienna; Dr. Thudichum, London; and M. Trapp, St. Petersburg. The work is not yet finished, but we believe is still progressing.

## THE VIENNA EXHIBITION.

It is sincerely to be hoped that our British manufacturers will not miss the opportunity which Austria offers them next summer. International exhibitions are not yet played out, and there are some exceptional features about this one at Vienna which should commend it very forcibly indeed to those of our merchants who are already beginning to complain that the world is hardly big enough for them. In the first place it will be visited by the whole Austrian Empire almost *en masse*, for we are continually advised of the interest which all classes take in its progress. In view of the reputation which clings to English-made goods in Austria, our trade with that empire is hardly so extensive as it should be. But perhaps more important even than Austria are the great Eastern populations which will be represented at this exhibition. All the way from Vienna to Calcutta there are fields waiting to be cultivated by the civilising hands of Anglo-Saxon merchants. We shall have a railroad to India soon, and English engines will shriek in the streets of Bagdad. All these populations, Turks, Arabs, Syrians, and Persians, are busily preparing work for this International Exhibition at Vienna, and representatives of all those nations will be there in great numbers. Surely it will not be well for Great Britain to be meagrely represented, and we therefore urge on those manufacturing houses whom this may reach, the desirability of promptly communicating with the secretary of the English Commission, 41, Parliament-street, W.

## CHEMISTRY AND ROYALTY.

WE met with an anecdote lately about Scheele, which is so good that we intend to believe it forthwith. This great chemist discovered oxygen and nitrogen in air; chlorine, manganese, barytes, tungsten, molybdenum, prussic acid, hydrofluoric acid, glycerine, and citric, tartaric, oxalic, malic, tannic, uric, and lactic acids. During his lifetime, the King of Sweden, his sovereign, visited Paris, and Lavoisier and all the learned men inquired about Scheele, but his Majesty had never heard of him. He wrote home at once, and ordered his ministers to look him up. The only Scheele who could be found was a clerk in

one of the government offices, so he was knighted and pensioned. But when the king returned, the real Scheele was found, and offered every inducement to take up his residence in Stockholm, but he preferred his shop in Koping, and lived and died in his little laboratory.

## THE ATTORNEY-GENERAL ON THE JURIES BILL.

WE quote from Sir John Coleridge's speech at Plymouth, where he inaugurated the Jurisprudence section of the Social Science Congress, the following remarks concerning the Juries Bill, of which he is the author:—

"If things work fairly well, and result in no great or widely-felt grievance, nine Englishmen out of ten will be for leaving them alone. There are, however, many things which do not work well, and amongst others the law relating to juries. A good system of juries is of infinite importance; our present law works badly, and occasions unjust, oppressive, and entirely needless inconvenience. It is a subject entangled with details, and difficult to deal with. But I invite your attention to the Bill upon the subject which it became my duty to endeavour to pass through Parliament this year, as an example of the manner in which I conceive it to be practicable and right to reform the law where it is faulty. If the Bill ever passes—and if I hold office I shall try earnestly that it shall—it will contain the whole law of juries, and will introduce certainly large, and I hope useful, alterations into one of the most important of all our institutions."

We have printed in italics the sentence to which we wish to direct the especial attention of our readers. In the same speech, Sir John Coleridge very forcibly urged the appointment of a minister of justice.

## CIVIL SERVANTS.

In a speech towards the close of last session of Parliament, Mr. Lowe stated that "Civil Servants" were absolutely prohibited from engaging in mercantile pursuits, *if those pursuits took up any portion of the time which they owed to the public.*

We hope our readers are not tired of our perpetual recurrence to this subject, for we have not concluded our reflections on it yet by many an instalment. We may also inform the Right Hon. the Chancellor of the Exchequer that a reading case for the CHEMIST AND DRUGGIST may be had, price 2s. 6d., for we intend to favour him with our journal until we can get a little tax-payer's logic into his mind. He can pay us for it out of his "Conscience Money" Fund. Some day, it is to be hoped, an idea will burst upon him that it would be well to inquire if the mercantile pursuits in which some of the Government servants choose to engage do take up any portion of the time which they owe to the public. That is not the only point to be settled in this dispute, but that is sufficient to submit to Mr. Lowe at present.

As will be seen from another page, the metropolitan chemists are taking up the question in real earnest. They are tired of mere arguments, and they have decided to come to action. They say, if these civil servants and their aristocratic patrons have decided to push us aside, and for anything they care, to ruin us: *bien*. They may prate about their right to buy and sell what and how they please, if they choose; we will discuss the matter with them no longer. The time has come for fighting, and the time has passed for arguing. It may be a hard and a long fight certainly, for it needs that we should organise and discipline the trading classes of this empire. That done, and they will all at last be on one side be sure—why, Her Majesty's servants and Her Majesty's ministers may take the other side if they like.



SUPPLEMENT TO THE CHEMIST AND DRUGGIST  
OCTOBER 15<sup>TH</sup> 1872.



Yours sincerely  
J. C. Brough.





## PROFESSOR ATTFIELD'S REPLY.

THE short reply which Professor Attfield has published "to some questions that have been raised" in consequence of his paper on pharmaceutical education, is quite as remarkable for what is left unsaid as for what is said. Naturally the Professor retains his opinion that a defunct course of education should be demanded from candidates for the examinations, but seeing that, as Mr. Haselden hinted at Brighton, this question can hardly become a pressing one during the present generation, it would hardly seem worth while to discuss it at present. Dr. Attfield is no doubt very earnest in his desire to elevate the practice of pharmacy in this country, but he must be distrusted for legislative business so long as he fancies that a resolution passed by the Pharmaceutical Council will secure that end. He still maintains that any clumsy charlatan can "cheat" the examiners with the most perfect ease, and afterwards, without showing a single step of his logic, he repeats "that so far from attacking the examiners, I support them." In two lines of type he disposes of "the plans of education proposed by Mr. Reynolds, Mr. Schacht, and even that which 'comes from Jötenheim,'" sweeping them all away with the besom of his own dictum, without a single word of even apparent argument. In short, he again conveys the impression which candid readers received from his former paper, that in his opinion there is no pharmaceutical education in England worth the name except that which is to be had at the School of Pharmacy, Bloomsbury-square. Dr. Attfield has no doubt succeeded in stirring up a little sensation, but his present exploit is not worthy of his position, of his reputation, or of his ability.

## THE AMERICAN PHARMACEUTICAL ASSOCIATION.

CLEVELAND, OHIO, U.S., SEPTEMBER 3, 4, 5, 6, 1872.

*Expressly reported for the CHEMIST AND DRUGGIST.*

THE twentieth annual meeting of the American Pharmaceutical Association was held in Cleveland, Ohio, on September 3rd, and continued until the 6th, six sessions being held. The attendance was about 140, being next to the largest gathering ever held. Seventy-five persons were elected to membership, while the loss by resignations and death have been but few. The meeting was convened at 3 p.m. on the 3rd inst., President Euno Sander calling to order. The first session was chiefly occupied in appointing committees and hearing reports read, part by titles and two or three in full. Delegates were present from the Colleges of Pharmacy in Boston, New York, Philadelphia, Baltimore, Cincinnati, Chicago, Louisville, St. Louis, Lawrence (Kansas), Tennessee College, at (Nashville), and the Ontario College, from the alumni of the colleges in Boston, New York, Philadelphia and Baltimore, from the Pharmaceutical Associations of New Jersey (State), Newark, N.J. district of Columbia, Alleghany Co., Pa., Saginaw Valley and Mississippi (State) Pharmaceutical Association. Delegates and members were in attendance from twenty-one States and Canada, quite a number of whom must have travelled fully 2,000 miles in going to and returning from the meeting.

The report of the permanent Secretary, Professor J. M. Maisch, suggested to increase the number of journals for use of committee on the progress of pharmacy, to illustrate he published "Proceedings" by woodcuts when desirable, and some minor changes to facilitate business.

The address of President Euno Sander advised that the initiation fees be set aside to form a reserve fund for the association, on the ground that while the finances at present were in a most satisfactory condition, it would be well to accumulate funds in case there might be a future necessity. He suggested that the Committee on Progress of Pharmacy should be divided into departments, each member of the committee to make a separate report. The address of the President and the report of the Secretary were referred to a special

committee:—William Saunders, London, Ontario; W. S. Thompson, Baltimore, Md.; Joel S. Orne, Cambridgeport, Mass., to report at a further sitting. The session then adjourned.

The report of the committee (from the meeting at St. Louis) on a proposed change in our mode of transacting business, by substituting a council composed of the officers and the chairmen of certain committees, by whom all matters of a business character were to be transacted, and leaving the scientific papers and discussions for the general meeting, was now presented and read, and after a few comments upon it, it was on motion made the special order for 11 o'clock Wednesday.

On Wednesday two sessions were held, 9 a.m. and 3 p.m. After the adoption of the minutes of Tuesday, the committee on nominations reported as follows:—

*President.*—Albert E. Ebert of Chicago, Ill.

*Vice Presidents.*—Samuel S. Garrigues, Saginaw, Mich.; Edward P. Nichols, M.D., in Newark, N.J.; Henry C. Gaylord, Cleveland, Ohio.

*Executive Committee.*—T. S. Uregand, Philadelphia, Pa.; George Leis, Lawrence, Kansas; C. L. Eberle, Philadelphia, Pa.; H. J. Menninger, Raleigh, N.C.; J. M. Maisch, Philadelphia, Pa.

*Committee on Progress of Pharmacy.*—Louis Dohme, Baltimore, Md.; J. P. Remington, Philadelphia, Pa.; E. Scheffer, Louisville, Ky.; C. B. Smith, Newark, N.J.; T. H. Hazard, Richmond, Va.

*Committee on Drug Market.*—P. W. Bedford, New York, N.Y.; W. H. Brown, Baltimore, Md.; W. P. Keffer, New Orleans, La.; Mr. H. Brill, Pittsburg, Pa.; W. J. Merrill, Cincinnati, Ohio.

*Committee on Papers and Queries.*—C. L. Diehl, Louisville, Ky.; H. M. Rittenhouse, Philadelphia, Pa.; J. F. Hancock, Baltimore, Md.

*Business Committee.*—Paul Balluf, New York, N.Y.; C. H. Dalrymple, Monisterton, N.J.; W. H. Crawford, St. Louis, Mo.

The full ticket as reported by the Committee on Nominations was elected.

Credentials were presented from the School of Pharmacy of the Georgetown Medical College. This announcement led to some inquiry and a very animated discussion as to the admission of such a delegate. The ground taken by most of the members was that no organization controlled by other than pharmacists had any right to representation in this body. It was referred to a committee, but when the committee met, the delegate requested to withdraw his credentials, and desired that the discussion should not be reported in the proceedings. At subsequent session the committee presented their report, and by vote the request was granted.

The President elect was now conducted to the chair, when he said:—

"Gentleman of the Association,—For this unexpected honour accept my sincere thanks. I hope that you will bear with my shortcomings, promising that I will make every effort to follow out the noble precepts of my predecessors, and thereby add my mite to the usefulness of the Association in its work of elevating our profession, for which purpose we have assembled in this beautiful city by the lake. To those who meet with us for the first time on this occasion, I extend the hand of fraternal welcome, hoping that they may become so interested in the good work, that we may frequently hereafter have the pleasure of their presence at the future meetings of the Association."

On motion, a vote of thanks was tendered the retiring officers.

The Treasurer then read his annual report—showing an excellent condition of the finances, much more cheerful than any he has had occasion to present heretofore. After its reading, it was referred to an auditing committee, who subsequently reported that the accounts were correct, and kept in admirable order.

The report of the committee on "Council" now came up for discussion, in which Dr. E. R. Squibb, W. Wright, jun., J. T. Shinn, William Proctor, jun., and Professor J. F. Moore were the principal speakers. It was concluded by nearly every speaker that while time was occasionally wasted in some discussions and by routine business, yet the majority of the members preferred to take part in such matters than to have



it transacted for them by others, and that the proposed change would deprive our meetings of much of the zest which now characterized them. A motion that the whole matter be indefinitely postponed, was carried by an almost unanimous vote.

The PRESIDENT then announced as the Committee on Specimens:—Messrs. H. J. Menninger, Raleigh, N.C.; E. Sheffer, Louisville, Ky.; C. Hohley, Toledo, Ohio; W. McIntyre, Philadelphia, Pa.; and M. L. M. Peixotto, New York City.

The Committee on Queries then read the list they proposed to submit to the members for their acceptance, and it was handed to the members for that purpose.

Selections were next read from the very interesting report of John McKesson, jun., Chairman of the Committee on the Drug Market, giving some facts and figures about the importation, values, fluctuations in prices and qualities of the leading medicinal and commercial drugs and chemicals. The report was well received, and referred for publication.

Mr. PROCTOR, jun., then read a letter received from Henry B. Brady, President of the British Pharmaceutical Conference, presenting on their behalf to the American Pharmaceutical Conference a very handsome photograph album, containing a large number of portraits of leading pharmacists of Great Britain. The reading of the letter elicited much applause, and it was moved that it be accepted, and the Secretary return to the British Pharmaceutical Conference our hearty thanks for this handsome testimonial of their good wishes to the Association. Subsequently by resolution it was directed that the album be placed in the care of the Secretary, and that it be taken each year to our place of meeting in order that the members of the Association may have the opportunity of seeing it.

By the kindness of Mr. James Mackintosh, the officer in charge of the signal station at Cleveland, the Association were daily supplied with charts and reports of the weather.

Dr. E. R. SQUIBB made some interesting remarks upon the Signal Service and its benefits to our marine interests, as also its uses throughout our country, and explained in detail the manner in which it is conducted.

The charts and accompanying reports were received with thanks, and the Secretary was instructed to have the charts reproduced and published in the "Proceedings," with such accompanying reading matter as shall make it of interest to the members of this Association.

The morning session then adjourned.

On assembling Wednesday afternoon, the Committee on Legislation presented their report, narrating what had been done in the various States respecting the action of the governing bodies towards our profession. The principal act accomplished was the passage in the Legislature of New York State, of a law which required the examination and registration of all persons dispensing medical prescriptions in the City of New York, who were not graduates in pharmacy nor had obtained a licence from some legally authorized examining board.

The subject of life membership was called up, and a resolution was adopted that those persons who do not, previous to May 1st, 1873, reply to the treasurer (either accepting or declining their right to the privileges of life membership as conferred under the old constitution and bye laws) shall be considered as having relinquished their rights and privileges.

The Committee on Papers and Queries now presented the papers they had in their charge, and their reading was begun.

Mr. Kadish, of Chicago, was expected to have presented a report on the "Efficacy of Cantharidate of Potassa as a Vesicant," but owing to the great fire in that city he was not able to pursue his experiments.

Dr. SQUIBB stated that he had not found the liquid preparation of cantharidate of potassa as prompt and reliable as he had hoped. In some cases where it had been made for nearly a year, it seemed to have sensibly lost its efficiency, and after having been applied for several hours, would scarcely produce any redness of the skin; at other times, and especially when first made, it was very active and satisfactory. Further remarks by Messrs. Eberle, Ebert, and Maisch, were of the same experience as to the apparent deterioration of the article, and also that when the ceratum

cantharidis is made by a process intended to have the cantharidin fixed by potassa, it fails to have any vesicating power whatever.

Mr. J. L. LEMBERGER, of Lebanon, Pa., read a paper on the preparation of "Lactin" in the United States, in which he states that but very little has been produced, and that as the residue of the milk from the manufacture of cheese is more profitable as food for animals there is no probability of lactin becoming a manufacture of this country.

A paper by R. ROTHER, of Chicago, on "Syrup Senega," and the best method of avoiding the pectinous principle in preparation of that drug, was read by WILLIAM PROCTER, Jun. Remarks on the subject were made by Messrs. EBERLE and BEDFORD. A paper by E. J. WEEKS, of Jackson, Mich., on tests for the purity of "Oil of Eryugo" was read. The following were noted as approximate tests:—When pure oil of eryugo is dropped on bibulous white paper it should leave only a faint and very light coloured stain. When shaken with an equal bulk of liq. potassa, it separates in two strata, both of which are clear. Any fixed oil present will become emulsionized. Sulphuric acid had also been used, and a marked difference in the behaviour of the pure oil and that which has been sophisticated is apparent. A paper by T. J. COVELL, of Jersey City, N.J., on a drug mill best adapted to the wants of the pharmacist, was read by J. P. REMINGTON. He recommended Hance's drug mill as being most easily cleansed, taking less room, possessing the adaptability of grinding either coarse or fine powders, that the plates retain the sharpness of their grinding surfaces longer than most of the mills, and more work accomplished with less waste of muscular labour.

Mr. J. F. HANCOCK, of Baltimore, read a paper on the best arrangement of the dispensing counter, securing convenience in manipulation and economy of space. The paper was accompanied with drawings and plans. The ideas and suggestions of Mr. Hancock were excellent and practical, but the necessity of being brief in the account of the meeting forbids us to enlarge on this paper, especially as an *outline only* of the paper would hardly do Mr. Hancock justice, or your readers any profit.

Dr. E. R. SQUIBB read a paper on "Aconite Root." After stating the difficulty in finding uniformly good aconite root in the market, he had concluded that the best practical test of its quality was by *tasting* samples. If, in taking a handful of the root, eight out of ten pieces gave the peculiar numbness of aconite to the tip of the tongue, he should consider it a good, reliable article. This testing should be done by taking only a small fragment from a root, chewing it a moment between the front teeth, and then ejecting it. If in a few moments the numbness was developed, the root was laid aside, and no other sample tested until all the effect of the aconite had passed off. It should be several hours before a sample of another root be tested, unless the previous sample failed to produce the effects alluded to.

Dr. SQUIBB then read a paper on "Rhubarb," giving an account of the supply of the past year in quality, quantity, character, values, and comparative medicinal virtues. The series of papers on rhubarb which Dr. Squibb has furnished for the past few years, form a history of the rhubarb market, and are of great interest.

A paper by Professor A. B. PRESCOTT, of Ann Arbor, Mich., on "Glacial Phosphoric Acid and its Impurities," was read. Of six samples examined all contained some traces of foreign ingredients, either soda, or silicic acid, and in one case arsenious acid. Dr. SQUIBB stated that he had found trouble from the presence of manganese, which at times developed a pink colour. He always treated the solution with sulphuretted hydrogen, which precipitated it.

ENNO SANDER read a paper in reply to the query—Does wood creasote exist in the American market? If not, what is supplied instead? Professor Sander stated that the chief trouble was to know that we had an absolute test to distinguish between the varieties of creasote. Until recently there has always been great uncertainty in this respect, and even yet there appeared to be hesitation in the minds of some concerning the absolute correctness of the test proposed by Morson. He had examined four samples of creasote (two of them purporting to be from beechwood), but only one of the samples, according to Morson's test, was of wood origin. He was still in doubt, and desired to examine further.



Mr. J. P. REMINGTON said that he had tried Morson's test, but that in every case but one failed to find the characteristic mentioned as distinguishing the article obtained from wood, and that sample was of Morson's make. It was a question in his mind whether the test was not a distinguishing mark rather of Morson's creasote than of wood creasote.

Professor MAISEH stated that Flückiger had asserted that his own experiments proved that Morson's test failed to indicate true German wood creasote.

#### Fourth Session.

Thursday morning. A telegram from Dr. T. E. JENKINS, Chairman of the Committee on Progress of Pharmacy, stated that his report was about complete, but not ready to present to the Association, and on motion the time was extended till October 1st.

R. J. Brown, C. L. Eberle, H. J. Menninger, were appointed a committee to report at a future sitting a place for the next annual meeting.

Professor J. F. JUDGE, of Cincinnati, moved an amendment to the bye-laws, that all delegates to this Association must come from organizations "controlled by pharmacists." The object of this proposition was to prevent any medical college or university organizing a school of pharmacy, and sending delegates, when the organization was not originated, controlled, or represented by pharmacists.

Mr. PAUL BALLEF, New York City, read a paper on "Pharmaceutical Legislation," more especially as applied to the state of New York.

The President appointed as Committee on Adulterations and Sophistications—

Charles Rice, of New York; T. N. Jamieson, Chicago, Ill.; E. Scheffer, Louisville, Ky.

The Committee to whom the address of the President and his report of the Permanent Secretary was referred, stated, that, having carefully considered both documents, they had agreed to submit the following suggestions for the action of the members:—"That a fund be set aside from the amounts received as 'Initiation Fees,' to be kept as a reserve fund to meet future contingencies. That the members of the Committee on Progress of Pharmacy should divide the work, so as to facilitate and relieve the chairman of the committee. That the Committee on Specimens should be appointed at the first session of each annual meeting. That a larger number of foreign journals should be placed at the disposal of the Committee on the Progress of Pharmacy. That our proceedings should contain a larger number of illustrations, and authorizing the Executive Committee to procure them whenever they deem it advisable. That in regard to the communication of the American Medical Association on the use of some suitable 'poison bottle,' they do not recommend any special action at this time." The report was accepted and adopted.

In moving the adoption of the report, the speaker dwelt on the arduous duties of the Chairman of the Committee on the Progress of Pharmacy, and some views were expressed as to its being only a question of time when that work should be done by a salaried officer, as it was too much to ask any member to give so much time to a labour so great without compensation.

Mr. O. EBERBACH, of Ann Arbor, Mich., then read a paper on the chemical examination of some of the elixirs of the market, causing some merriment at the homeopathic quantities of alkaloids found in some of those he had tried. Eleven samples were examined, some of which were fully up to the standard claimed for them on the labels, while others were very weak. The writer then appended formulae for several of the more important elixirs.

After the reading of this paper a lengthy discussion took place on the subject. Dr. SQUIBB was opposed to medication in this form, as it had led to great abuse. It was king out of the hands of the physician and pharmacist their legitimate calling, and transferring it to manufacturers and advertisers. The construction of a formula for an elixir was to combine certain meritorious articles of medicine, in quantity supposed to form a fair dose, and make it answer for innumerable varieties of disease, or supposed disease; and this is then lauded as a "remedy" by those who patronize printing. As all were, in a large proportion, the dose, alcoholic, it had led to serious "tippling," and

it was now a fashionable form of taking a stimulant. Allusion having been made to the annoyance to pharmacists from the fact that so many kinds of elixirs from different manufacturers were ordered, President EBERE stated that he had adopted a rule in his store, always to prepare the elixir himself, putting the medicinal articles in a "simple elixir" in the proportions indicated by the label of the manufacturer designated, but had noticed that frequently his tasted more of the medicinal ingredients than that of the manufacturer whose formula he had followed.

Professor J. FARIS MOORE, of Baltimore, said he had always sent out his own make of elixirs, no matter whose were ordered, and believed he was right in doing so. He considered himself competent to make as good a preparation as any one; and all preparations, official and non-official, which he dispensed were his own manufacture.

Mr. J. T. SHINN thought the intention of the physician should be followed, and if he specified any particular make, that alone should be given him, without regard to our own opinion on the subject.

Mr. J. F. HANCOCK (Baltimore) said he gave whatever kind was ordered, and followed the prescription *literally*.

Dr. SQUIBB said that when a physician designated any special article or manufacture, the dispenser had no right to substitute any other article or make, unless in very urgent or peculiar circumstances. No man could make a law in this respect to govern all, but every one was a law to himself. No one could say that it was impossible for any well-educated pharmacist to make correct and reliable preparations; but if a special article or any preparation made by some designated manufacturer, it was his duty to give the article kind designated, or decline it. He mentioned a case where a physician in Brooklyn ordered from a pharmacist some articles of his own (Dr. Squibb's) manufacture. The pharmacist told the physician that he prepared those articles himself in strict accordance with the "United States' Pharmacopoeia," and that they were as good as his (Dr. Squibb's). If he was satisfied with them, he should be pleased to prepare his prescriptions, otherwise he would decline them. The physician was satisfied, and, although a warm friend of himself (Dr. Squibb), and the preparations made in his laboratory, he admired the frankness of the pharmacist and became one of his best supporters. He gave this as an instance where the competent pharmacist asserts his dignity and independence, and makes the medical man more confident in his skill and integrity.

WM. PROCTOR, jun. said his views were very plain on this subject—the prescription should be adhered to, or declined. If you know the physician, or have an opportunity to see him, bring to his notice the article you prepare, and suggest its use, but adhere to the prescription you undertake to prepare.

The session adjourned, after a little routine business, until Friday morning, expecting the members would participate in an excursion on Lake Erie. The weather being threatening, the excursion was delayed till the following afternoon; and a call for a special meeting, signed by a large number of members, was presented to the President, who issued a notice for a meeting in the afternoon, to transact scientific business only.

After the reading of the call, Mr. R. J. Brown read a paper in reply to Query No. 45, in which he advocated the necessity of this Association taking such measures as would arrange and adopt formulae for unofficial preparations, in order that some uniform standard would secure more uniform results in dispensing such preparations.

Mr. B. LILLARD, Nashville, Tenn., read a volunteer paper on the production of opium near Nashville. Having detailed the manner of cultivation and collecting the exuded juice, and careful drying, he stated that the yield had been from 30 to 50 per cent per acre. The opium thus prepared was smooth, tenacious, of dark-brown colour, and free from any gritty particles. (The sample shown was of very excellent character, but the exterior colour was quite dark, resembling in colour and odour that of Egyptian opium.) One hundred parts yielded eighty-three parts of powder, of which there were eleven parts of insoluble matter, and ten parts of alkaloids. It was considered a success, and this year a much larger tract had been placed under cultivation.

Professor J. M. MAISEH read a paper on a plant growing in Mississippi, popularly called "sneeze-weed," which is poi-



sonous to horses. As he had not finished his investigations, the subject will be again reported upon next year.

GEORGE C. CLOSE, Brooklyn, N.Y., furnished a paper on Japan wax, in which, after detailing various experiments, asserted that it possessed no advantages over bees' wax.

A paper by Professor EDWARD PARISH on Preliminary Education best adapted to those who desire to qualify themselves for the business of druggist and pharmacist, and on preliminary examinations for colleges of pharmacy, was read by Mr. Procter, jun. This paper was very interesting, and brought out the necessity of gradually increasing our standards—not only of education, but also of examination. It would be impossible to do any justice to the subject by any epitome which could be placed in your columns at present.

Professor J. M. MARSH read a paper "On the Chinese Cantharides, and a comparison with the European Cantharis Vesicatoria." The paper, which was quite an exhaustive essay on the subject of cantharides, gave also some interesting results of experiments as to the product of cantharidin. The Chinese cantharides had yielded in these experiments 0.4 per cent. of cantharidin, which was nearly two and a half times as much as the European had given, and almost twice as much as the best yield recorded by any investigator.

Mr. C. W. GRASSLY, of Chicago, Ill., sent a paper "On Seidlitz Powders," read by WILLIAM PROCTER, jun. The writer stated that in his investigations he found that very few of these Seidlitz powders of the market were to be depended upon for accuracy, as they were generally made by measure and not weight. In examining the Seidlitz mixture it appeared to be prepared in the proper proportions. The chief point of the paper was to show the want of accuracy caused by the usual method of employing the measures sold for the purpose. Allusion was made to the fact that in at least one of the old stores in Philadelphia (which followed the practice of a celebrated London store) under the name of "Improved Seidlitz Powders" it was usual to add to the contents of twelve blue papers one grain of tartar emetic.

The most interesting paper of this session was read by Dr. SQUIBB on the subject of "Percolation," and was illustrated by the process being conducted in the presence of the members. The process is an adaptation of both maceration and percolation in connection with the use of a syphon, and is an improvement by Edward H. Squibb (a son of Dr. Squibb), upon a plan suggested by Dr. Squibb some years ago. The process cannot be described readily without going too much in detail for your journal.

The fifth session was held on Friday morning.

The Committee on Infringement of Stamp Tax, presented their report, and recommended the following suggestions:—Manufacturers should be held liable for the proper stamp duty on their goods. Imported goods should not be required to be stamped, as they already pay a heavy duty. Congress should be petitioned by a committee from this body to repeal such laws as conflict with these recommendations. The report was accepted and adopted.

The President subsequently appointed as the committee to communicate with the proper authorities in Congress:—C. H. Dalrymple, Morristown, N.J.; Professor J. Farris Moore, Baltimore, Md.; William Hegeman, N.Y.

The Photograph Committee, through Mr. J. T. Shinn, then presented to the Association a very handsome photograph album, containing the photographs of about 150 of the members.

The album was accepted, and the Permanent Secretary authorized to take charge of it. The Permanent Secretary was authorized to forward a copy of the forthcoming United States' Pharmacopoeia to each of the foreign associations with which he is in correspondence.

A resolution was offered "That a committee of three be appointed who shall present the name of a suitable person as Reporter on the Progress of Pharmacy to be appointed at the next annual meeting, and the committee shall also present such changes in the bye-laws as may be necessary to carry out the object of this resolution.

The resolution was adopted, and the President appointed as the committee. Messrs. Wm. Procter, jun., E. R. Squibb, M.D., E. H. Sargent.

Dr. Squibb read an interesting paper on "Aloes," containing information as to the grades, qualities, and characteristics of the several varieties in the market. He gave some particulars of its preparation, and instanced as a specimen of the

carelessness or roguery of the producers, that it contained from 5 to 10 per cent. of impurities which could be separated by straining, consisting chiefly of shreds of goatskin, hide, animal matter, wood and earthy impurities, while recently he had found an entire goatskin bottle, and a peculiarly shaped knife with wooden handle. His opinion was that only Socotrine aloes should be used in medicine for the human family.

Dr. SQUIBB also read a paper on "Ammonio-Citrate of Bismuth," in which he spoke of the facility of procuring a double salt by *crystallization*, and advocated its being made by that process, as yielding a product more uniform and soluble.

A paper on "Triplex Pills," by Dr. SQUIBB, was then read by him in which the formula as used by the late Dr. John W. Francis, of New York, was given. The formula is Socotrine aloes in powder, scammony in powder, mercurial pill, each 480 grains, croton oil, 20 drops, oil caraway 1½ fl. dram, tinct. aloes and myrrh to make into 400 pills.

Mr. R. W. GARDNER read a paper on a "Protected Solution of Protoxide of Iron," or syrup of ferrous nitrate, giving a working formula.

Mr. G. W. SCHAEFFER, of Fort Madison, Iowa, read a paper on the preparation of "Compound Elixir of Mandrake," giving the formula.

WM. SAUNDERS, of London, Ontario, read a brief but instructive paper on "Extract of Indian Hemp," (ext. cannab. indic.) as prepared from the dried tops of that plant, giving the yield of extract from the various portions of the percolate, and its cost to produce.

JOSEPH HANOP, of Leavenworth, Kansas, contributed a paper on "Pressed Herbs," with a press of simple construction, so that any pharmacist could prepare his own herbs in papers.

The Committee on Place of Meeting now reported, recommending Louisville, Ky. Members named Nashville, Pittsburg, Richmond, Washington, and New Orleans, and the last amendment being Richmond, Va., the vote was put and declared carried favourably, there being forty votes in the affirmative, and thirty-three in the negative, and the time decided was the *third* Tuesday in September, 1873. Thomas H. Hazard, of Richmond, Va., was then elected Local Secretary, and the Executive Committee were authorized to make any necessary arrangements in case Mr. Hazard declined to act.

A committee, consisting of J. F. Hancock, Baltimore, Md., J. G. Steele, San Francisco, Cal., H. Osborne, Columbus, Miss., R. J. Brown, Leavenworth, Kansas, and O. Eberback, Ann Arbor, Mich., was in obedience to a resolution, appointed by the president, "To consider the subject of elixirs and unofficial preparations in all its bearings upon pharmacy, and, if deemed proper, to report formulae for the guidance of the members of this Association.

The executive committee reported the names of Prof. Robert Bentley, of London, England, Stanislaus Martin Paris, France, for election to honorary membership, and by ballot they were so elected.

Resolutions of thanks to the press, our pharmaceutical friends of Cleveland, and others were passed, after which the minutes of the meeting were read and adopted, when on motion the Association adjourned to meet at 3 p.m. on Tuesday, September 16th, 1873, in the city of Richmond, Va.

In connection with the meeting of the Association an exhibition of articles of interest to the pharmacist, occupied the galleries of the "Rink." Though the collection was much smaller than in some former years, and the peculiar shape of the building precluded their arrangement in a compact form, yet the display was neat, attractive and instructive.

In chemicals the firms of Powers and Weightman, of Philadelphia, and C. T. White and Co., of New York, were the only large exhibitors. The former house exhibited large masses of the sulphates of quinia and morphia under glass shades, with a great variety of alkaloids and their salts, chemical combinations of mercury, silver, iron, lead, bismuth, ammonia, sodium, potassium, and others, all of excellent quality and handsome appearance.

C. T. White and Co. exhibited a very large variety of chemicals. We note strychnia and its salts, sulphate of morphia, sulphate of quinia, acetic acid, o.p. (a very superior article), iodide and bromide of potassium, scale salts of



n, chemicals obtained from all the leading mineral bodies, and a large number of organic chemicals of superior quality, and some crystals and displayed with great taste.

Lazoll, Marsh, and Gardiner, of New York, had an attractive display, comprising a large variety of fluid extracts numbering 125 different kinds, made with great care and accuracy. "Select Powders" (for which this firm have been noted) about thirty kinds, some samples of crude drugs, a selection of chemicals from their laboratory, and a variety of perfume extracts of choice quality were quite prominent.

McKesson and Robbins, of New York, had a display of fluid extracts, chemicals, pharmaceutical preparations, and a collection of seeds sixty in number, and containing quite a number of rare specimens.

Strong and Armstrong, Cleveland, Ohio, had an interesting display of crude drugs, essential oils, spices, and articles of diet.

B. O. and G. C. Wilson, of Boston, Mass., exhibited a splendid assortment of leaves, flowers, herbs, roots, barks, and seeds, both pressed and loose.

Cheney, Myrick, Hobbs, and Co., Boston, Mass., had a large and interesting collection of choice articles of our indigenous Materia Medica.

There was quite a large number of other exhibitors, but have indicated those whose names are familiar to your readers.

In concluding this imperfect sketch of a very pleasant and profitable gathering of our fraternity, I must apologise to your English readers, and express my fear that this account may fail to interest them from the imperfect details. At these meetings have great attraction to the members will be apparent from the fact that year after year many attend regularly, travelling at times distances which would seem incredible to many of your Associates of the British Isles. The "democratic style" of our proceedings may amuse your more conservative members of the fraternity, but we enjoy a freedom and yet accomplish worthy results.

Two of our own body have been with the British Pharmaceutical Conference at Brighton, and we trust they have given you the assurance that we shall always be glad to come to our meetings any of our British brothers who (like their genial President, H. B. Brady), favour us with their presence at any of our future gatherings. B.

#### EDWARD PARRISH.

AMERICAN Pharmacy has lost a bright ornament, and all of us will miss a valued instructor by the death of Professor Edward Parrish, of Philadelphia. Mr. Parrish had been selected by the United States Government as special Indian Commissioner, to accompany a friendly expedition, the object of which was to visit the various tribes of Indians in the West, and to observe the working of certain measures which had been adopted in the Government negotiations with them. Mr. Parrish was a member of the Society of Friends, to which body the United States Government invariably entrusts all negotiations with the Indian tribes. Having arrived at Lawrence, Kansas, the expedition had to take an open waggon, and travel some 250 miles through an unhealthy region to Fort Sill. Mr. Parrish suffered severely from the journey, and arrived at Fort Sill in a prostrate condition. He was taken to the house of

Tatum, the Government Indian agent, who was himself a member of the same religious body, and from him and Mrs. Tatum he received the most tender and careful attention. The weather was very hot, the thermometer ranging as high as 120° Fah., and being in a very debilitated condition, Mr. Parrish succumbed to typhoid fever on September 9th, fully conscious to the last. He was buried the same evening. Our New York correspondent has sent the following interesting details of Mr. Parrish's public life. Edward Parrish was a son of Dr. Joseph Parrish, of Philadelphia, born May 31st, 1822. Having served a regular apprenticeship, he graduated from the Philadelphia College of Pharmacy in 1842, the year succeeding was elected a member of the College, and in March, 1854, was elected Secretary, in which position he served faithfully until September, 1861, by the death of Prof. R. P. Thomas, M.D., he was elected to the then vacant chair of Materia Medica. In 1867 (with the consent of the Board of Trustees) he exchanged

the chair of Materia Medica for that of Pharmacy, Prof. T. M. Merisit taking that of Materia Medica. For a number of years preceding his election in the College of Pharmacy, Prof. Parrish had conducted a School of Pharmacy. Not only was he interested in his profession, but the course of general education was one in which he was actively engaged. In the establishment of Swarthmore Hall, a college organized by the Friends, Prof. Parrish laboured energetically, and for some years was its president, a position which he resigned about three years ago.

Prof. Parrish contributed largely to pharmaceutical literature in the American Journal of Pharmacy and the American Druggists' Circular. Some years ago he contributed some American correspondence to this journal.

In the American Pharmaceutical Association he was long one of the most prominent and useful members, and his genial face and pleasant words were missed greatly at its last meeting. He was elected in 1852, and had been present at almost every meeting. Besides the many committees on which he had acted, he served as recording secretary in 1853, corresponding secretary in 1857, first vice-president in 1866, and president in 1868.

As a writer, he was best known by his Treatise in Practical Pharmacy, which has been very extensively used, and highly esteemed for its very useful information. He was engaged in preparing a new edition of this work, anticipating its publication at no distant day.

He contributed quite a large number of papers to the several meetings of the American Pharmaceutical Association, and two essays on other topics have been published in his native city.

As a pharmacist he was thoroughly competent and conscientious, and enjoyed the entire confidence of the community in which he dwelt, and the respect and esteem of all his associates in business. His loss will be deplored by all the profession here and abroad, while in the college with which he was connected, his removal will be greatly regretted by his associates and the students to whom he was ever warmly attached. He leaves four sons and a daughter to mourn the loss of a kind and indulgent father.

In reference to the lamented death of Professor Parrish, we have also received the following:—

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I have been directed by the Alumni Association of the Philadelphia College of Pharmacy to furnish you a copy of their action upon the death of Professor Edward Parrish.

I am, yours truly,

Philadelphia, Sept. 20, 1872. WILLIAM M'INTYRE, Sec.

EDWARD PARRISH.

#### Report of Alumni Committee on Memorial.

An adjourned meeting of the Alumni Association and graduates generally of the Philadelphia College of Pharmacy was held yesterday afternoon in the hall of the college. Mr. C. L. Eberle occupied the chair.

The committee appointed on the 17th inst. to draft resolutions, reported as follows:—

At a meeting of the Alumni Association and graduates of the Philadelphia College of Pharmacy, held Sept. 17, 1872, the following memorial, expressive of our sad bereavement in the death of Professor Edward Parrish, was directed to be presented to the family of our beloved friend and teacher, towards whom our hearts are drawn in tender sympathy, who have been so suddenly bereft of their life-long companion and friend, and are stricken with a grief too full for utterance, and almost overwhelming. We feel that there is not one here in this meeting, of those who have been privileged to sit under his instruction, who can but bear testimony to the great and almost irreparable loss which the profession and general community have sustained, and to the personal sense of a vacancy in the circle of our truest and dearest friends.

To this community in which he has so long laboured and maintained an untarnished reputation, where indelibly are written the marks of his earnestness, integrity, philanthropy and public spirit, his memory will long be green.

The graduates and students of the college will sorely miss their genial, warm-hearted, and fatherly teacher who was so approachable, and so readily entered into sympathy with them in the difficulties that beset their paths.



The profession over this broad land will acknowledge and deplore his loss, and wherever his professional merit has been recognised, or his name introduced, all must unite in regretting the dispensation that has removed him thus early from the field of his usefulness.

But while we thus express our feeling of a common sorrow, we have the great consolation of all Christian hearts to know that he was calmly prepared for and anticipated the sad event, that he was surrounded by those who, while strangers, ministered tenderly to the necessities of his last illness, and that, soothed and sustained by an unfaltering trust, he approached his God "Like one that draws the drapery of his couch about him, and lies down to pleasant dreams."

The above paper was unanimously adopted.

## Foreign Correspondence.

### GERMANY.

DRESDEN, October, 1872.

ON the 3rd of September the South and North German Chemists met in Frankfort-on-the-Maine, and after having held each a separate sitting for the alteration of some of the regulations necessary for the union of the two societies, they both met the same day at 12 o'clock, when the new society, the "German Chemists' Association," was declared actually constituted, the separate societies having ceased to exist. The first proceeding was the election of officers of the association, with the following result: Mr. Schacht, Berlin, president; Mr. Wolfrum, Augsburg, vice-president; Mr. Brunnengraeber, Rostock, treasurer; Messrs. Wilms, Münster, and Leube, Ulm, trustees of the benevolent fund; Mr. Hartmann, Magdeburg, without special office. Mr. Danckworth, Magdeburg, formerly president of the North German Chemists' Association, who had strenuously endeavoured for years to effect the union, was unhappily prevented from attending the meeting by severe illness. There were 270 chemists present, among them Mr. Schacht, of Moorgate-street, London. The main subject of discussion was the vexed free-trade agitation. Dr. Dedek, of Wiesbaden, district medical councillor, spoke strongly against it, declaring it would be a serious blunder on the part of the Government to cancel the present organisation. His words were loudly greeted with applause by the assemblage. Then the following resolutions were passed:—

1. To ask the Chancellor for the formation of a commission of chemists, chosen from all parts of Germany, for the purpose of presenting to the Government their views and advices on all matters connected with the expected changes in pharmaceutical legislation.
2. To open personal intercourse with the members of the Diet, that the latter may obtain a clear view of the state of pharmacy, and to bring to bear on them all proper influence to induce them to oppose changes derogatory to the interests of pharmacists.
3. To continue to uphold the rights of pharmacy in the daily press, by properly written articles, and to show the falsehoods and incorrect statements of many attacks, directed against the pharmacy of to-day.
4. To draw up a counter report, subjecting to a careful and searching criticism all the statements contained in the report of the German Diet's petition committee (which was in favour of free-trade); report to be sent to each member of the Diet.

A resolution which empowered single members to appear at the annual meetings as representatives of their brother chemists, with the right to vote for them, limiting the number of votes to 10, was passed at the first sitting, but afterwards suspended for one year by the council, by virtue of its discretionary power, as by such an arrangement a few members might be enabled to rule the annual meetings, and exercise an undue pressure. That such an occurrence might sometimes take place seems not improbable; but on the other side it must be admitted that the annual meetings bear more or less of a local character, and by no means represent the views of the whole body of the society, as many chemists, living a great distance from the meeting place, cannot find sufficient time to go there, nor are inclined to go to the considerable travelling expenses, although they are quite willing to contribute to the expenses of a delegate to represent them. If we bear in mind that the North German Chemists'

Association numbered about 1,400 members, and find the number of visitors at the annual gatherings on the average hardly exceeded 200, we cannot help remarking that this figure represents a very small percentage, and is a sure sign that the existing system is not beyond improving. The right to vote by delegates would have been a good remedy; but as already mentioned, the resolution was suspended and referred to the next meeting, which is to take place in Cologne.

An animated debate was evoked by the discussion of a Ministerial order, issued the 25th of March, which names those articles that shall be sold exclusively by chemists, that is, chemists who are in possession of officially recognised establishments. This order is practically merely a repetition of former orders, but which in fact had been more honoured by breach than by observance; for in the course of years many establishments had sprung up, which in nearly all essential points resembled the officially recognised Apotheken, and not only dealt in all those drugs and chemicals which by law were the exclusive right of pharmacists, but even dispensed prescriptions. This illegal competition, although in most cases carried on by perfectly qualified persons, who were either not able or not inclined to pay the high prices for the genuine pharmaceutical establishments, had been suffered to go on till the evil (I am not quite sure whether this is the right expression, but certainly many persons will regard it so) proved too strong for any single chemist to successfully combat, and so the pharmacists generally contented themselves with complaints. But the above-mentioned order suddenly roused their spirits, and now they intend to take active measures to put it into full force. A special committee, comprising some of the best men in pharmacy, as Dr. Hirus, Jena, and Oberdörffer, Hamburg, was appointed to look after these matters.

After disposing of some questions of small importance, the proceedings were finished off with the usual dinner and pleasure-making. The year 1872 has certainly been an eventful one for German pharmacists. It has raised important questions, not yet finally settled; it has produced, after centuries of petty particularism, a pharmacopœia common to the whole craft; and it has also united two long-existing, but till now separated, societies, possessing common interests and following similar pursuits.

The Prussian pharmacists have the extreme of good luck to enjoy the special care of the Medical Department, and the latter has given an undeniable proof of its great carefulness and high wisdom as regards the welfare of the human race, so far as that race lives within the boundaries of Prussia proper, by ordering that every dispenser shall write his name on the prescription, no matter how often the prescription is repeated. This sounds very well, but many persons (of course they are very stupid not to agree with the Medical Department) don't feel much interest in such a collection of autographs, and strongly object to it. Now, what is the unhappy pharmacist to do in this calamity? On one side the stubborn customer, who positively refuses to see his prescription converted into a public ground for all sorts of handwritings, on the other side the plain and strict order of the governing authority, that threatens each offender with a heavy fine. Indeed, we poor men of mere common sense, or, as a certain high official expressed it, of limited understanding, want really a bit of that superior wisdom, generally supposed to be deposited in the brains of our office-holders, who frequently enough seem specially appointed to show to the interested public how a thing is not to be done, to get out of such a scrape. It would have been best to make the keeping of a copy-book for prescriptions compulsory; there every dispenser can enter his name without having any differences or disagreeable explanations with customers. Such an arrangement would have served equally as a control and as a means to arouse the attention of the dispenser; but this plan displays too much of the ordinary common sense to be thought of in those high regions,—it would work too smoothly. Perhaps the head of the Medical Department was too busily engaged on his correspondence with a pharmacist, to whom he had to grant a special permission to keep a small quantity of fly-paper optionally in the poison-cupboard next to the dispensing and retailing-room, instead of the store-room in some remote corner of the premises, to think of this plan, and like-



wise forgot that not only in country shops, but even in the residence under his very eyes, heaps of fly-paper can be found lying on the counters of sundry shops, keeping good company with sugar, coffee, butter, etc. But we must remember that he is more than a man of mere common sense, and regards affairs from a more elevated point of view than the stupid taxpayers. When will the time come when pharmacists will be left to take care of themselves?

Probably your readers will remember the bill of Mr. Delbrück, which allowed greater freedom in the establishment of chemists' businesses; 12 of the 25 confederate governments have at present decided against this bill, and undoubtedly more will follow, so that it may be regarded as lost, which, in spite of its liberality, is not much to be regretted. In connection with it, a rumour has spread that the Prussian Government does not intend to introduce free trade in pharmacy. Whether this report will prove to be true, and what course the Diet will pursue in this case, remains to be seen, likewise what reforms, if any, may be expected. It is, however, equally possible that there is no other foundation for this rumour than the wish of the adherents of the old system that it may be so.

The culture of opium, which has been tried in Silesia, has yielded no satisfactory results. The quantity obtained was small, and the amount of labour required proved at the present rate of wages too expensive, and as the quantity of seeds is diminished, the cultivation of opium was found not to pay so well as that of poppy seeds pure and simple.

## THE BRITISH ASSOCIATION.

(BRIGHTON.)

### PART II.

WE have no intention of reporting with anything like fulness the proceedings of all the departments. We shall be satisfied if we can but dip into the various sections and come out sane and strong enough to record a few interesting discoveries.

To commence with Section A (mathematical science) we may refer to two papers by Mr. C. DEWAR, F.R.S.E., the one on the "Temperature of the Sun," and the other on the "Temperature of the Electric Spark." He estimated the latter to be between 10,000 and 15,000° Centigrade. He estimated the temperature of the sun at 16,000° Centigrade.

Mr. W. F. BARRETT recorded a curious fact. He said:—On one occasion some six years ago, I wanted to cool a red hot copper ball. For this purpose I plunged it into some water in which I had just washed my hands. The hot ball went in without any hissing or visible evolution of steam, and on removing it from the water it appeared as hot as before, in fact, it remained brightly incandescent somewhat below the surface of the water. I was astonished to see this, as I did not know that the spheroidal state of water could be so readily produced and maintained by a body at his temperature. So I tried other red-hot bodies in the same water, and with the same result. I then threw away the soapy water and used plain water; the result was now quite different, the hissing was loud, and the evolution of steam copious. The soap evidently produces a spheroidal condition in the water. Oil has a similar effect. It can be blown in a glass vessel, and the hot body will be seen to be surrounded by a ring or shell of vapour. Shortly the ball cools by radiation, and then the shell collapses, and immediately follows a violent explosion. It was suggested that a little oil getting into steam boilers might probably occasion their bursting sometimes.

The papers on Chemical Science were not very important, and from the President's address to the close of the proceedings this Section shone as dimly as any. Among the papers we may select one on Fusion of Arsenic, by Prof. MALLETT, of Virginia, U.S., who reported some experiments undertaken by him in view of the generally repeated statement that arsenic cannot be fused, but passes directly from the solid to the vaporous state. He succeeded in procuring fused arsenic by filling narrow strong glass tubes (barometer tubes), which were again enclosed in an outer tube of iron, and heated in a charcoal fire. Arsenic thus treated was found on cooling to have fused into a perfectly compact crystalline mass of steel grey colour and brilliant lustre, having specific gravity of 5.709 at 19° C. Specimens of the

metal were exhibited to the meeting contained in glass tubes filled with coal gas, and the temperature of fusion lies between the fusing points of antimony and silver.

Mr. ALFRED TRINE showed that silver precipitated from its solutions by copper always contained some of the latter metal.

Mr. J. F. WALKER contributed a paper on "Dinitrobrombenzene," which to quote the local reporter was full of such words as mononitromonobrombenzene and metamononitromonobrombenzene, and therefore not calculated for light reading.

Mr. W. LANT CARPENTER explained Professor Bock's (Copenhagen) process for obtaining Stearic Acid. The peculiarity of this process is to apply strong sulphuric acid at such time and in just sufficient quantity to break open the albuminous envelopes which contain the fats. All operations are conducted in open tanks with steam not exceeding 35 lbs. pressure.

There was a lively discussion on Sewage, but it was utterly resultless, and without considerable space could not be made intelligible.

Mr. JOHN GELLETLY recorded some remarkable experiments with several oils. To give one example:

A handful of cotton waste, after being soaked in boiled linseed oil, and removing the excess of this by wringing, was placed among dry waste in a box 17 in. long by 7 in. square in the ends. This was placed in a chamber kept at about 170° Fah. Shortly after reaching the temperature of the warm chamber the mercury began to rise rapidly, viz., from five degrees to ten degrees every few minutes, and in 75 minutes from the time the box was placed in the chamber, the heat indicated was 350° Fah. At this point smoke issuing from the box revealed that the cotton was now in a state of active combustion, and on removing it to the free access of air it burst into flame.

Dr. CRACE CALVERT read a paper on "Bleaching Powder," which brought up one of the perennial discussions as to its exact chemical composition.

In a discussion respecting pyrometers, Professor FOSTER expressed his opinion that Siemen's electrical pyrometer will be made of great service in measuring high temperatures.

Dr. GLADSTONE and Mr. TRIBE had experimented on the decomposition of water. This is accelerated by any means which can induce galvanic action. Magnesium is capable by itself of decomposing water, but its action is greatly increased by touching it with a piece of copper, and some of the hydrogen gas makes its appearance on the copper.

Among the geological contributions, Mr. JAMES HOWELL presented a record of a most searching investigation into the geology of Brighton and neighbourhood. Our ancestors seem to have left their footprints pretty clearly behind, but what will our successors think if they should ever discover the Brighton Pavilion in a fossil state? That will be a puzzling flaw in our stratum.

Section D is sure to bring out some interesting papers and discussions, for it includes all the anthropologists, biologists, and students of natural history. As a singular botanical fact, Mr. M. MOGGBRIDGE drew attention to a curious elm on the side of the walk, north of the engine house at the Serpentine, Kensington Gardens. The height is 55 feet, circumference 8 feet 7 inches. It is flourishing, though on the east and north sides the bark is gone, and the surface of the wood decayed. There is a bunch of roots growing in an eccentric manner, and the tree is altogether a great natural curiosity.

Dr. P. L. SCALTER, the Secretary to the Zoological Society described the new Asiatic rhinoceros which the Society has lately received, and which is regarded as another species.

In the Anthropology department we were instructed by Dr. CHARNOCK, as to the gipsy dialect called Sim, which is the secret language in which they converse before strangers. This was traced to the Arabic, but the arguments of philologists are sometimes very fanciful. For example, in another paper, Dr. Charnock, tracing out the origin of Sussex names, gave his opinion that Framfield was derived through Frantville from the Danish *vand*, water! This is carrying investigation to an extreme length.

Mr. JOHN EVANS credited the Phœnicians with the invention of alphabets, explaining that originally each letter was a pictorial symbol. Thus the Aleph or A was an ox, the



Beth or B a house, the Gimel or C a camel, and so on. There was an interesting paper by Sir WALTER ELLIOTT on the "Primitive Weapons of Ancient India," which were described as of the boomerang family. An Indian gentleman, Mr. Sabapathi Iyah, claimed a very ancient civilization for his nation.

Mr. A. L. LEWIS, M.A.I., amused the anthropologists by describing a theory which he asserted to be held considerably in this country even by intellectual people, and which is to the effect that the Anglo-Saxon race is none other than the ten tribes of the House of Israel. According to these theorists, the Anglo-Saxons can be traced to Media and the Israelites also. That in fact, the latter entered that country, and emerged from it as Anglo-Saxons. The absurdities of this sort of guessing were easily shown by Mr. Lewis. The theorists hold that being Israelites, and therefore specially protected by God, Anglo-Saxons can never be defeated. If they had any accuracy of perception about them they would perceive that the battle of Hastings at any rate was an awkward obstacle. But when unrestrained by reason, it is easy to make every difficulty "a helper or a slave." So William the Conqueror and his horde of Scandinavian pirates are set down as the tribe of Benjamin, descendants of a body of men who left Jerusalem shortly before its destruction, having been previously converted. Such notions need no argument for their refutation.

Dr. NICHOLAS read an ethnological paper in which he tried to prove that the English race was rather Celtic than Anglo-Saxon. But Professor ROLLESTON in a few easy sentences demolished this theory by showing that the language and nearly all the remains discoverable proved incontestably how completely the Saxons overran this country, and he upset one of Dr. Nicholas's very strong points when he maintained that William the Norman was as decidedly a Teutonic type of man as ever existed.

Dr. CRACE CALVERT detailed his experiments as to the relative power of various substances in preventing putrefaction and the development of fungus life. In a series of test tubes had been placed a solution of albumen, and to each was added a thousandth part of the substance to be experimented with. The solutions were examined day by day by a microscope having a magnifying power of 800 diameters. It was found that carbolic and cresylic acids prevented the development of protoplasmic and fungus life. Chloride of zinc and bichloride of mercury prevented the production of vibrio life, but not of fungus life. Lime, sulphate of quinine, pepper, turpentine, and prussic acid acted in a reverse manner, while the remaining substances examined by the professor were found to prevent the development of neither form of life. Other valuable results were obtained by Dr. Calvert, for which we must refer to the paper.

Professor VAN BENEDEN described some fossil whales which had been discovered near Antwerp. He stated that the primitive whale seemed to be a dwarf, and in the Antwerp crag full-grown whales of not more than fifteen or twenty feet in length were found. Professor ALLMAN stated that we had the dwarf elephant, which was significant, inasmuch as there was a close relation between the elephant and the whale. We should like to know more of this relationship.

In the Physiology department, during a discussion respecting the liver, it was stated by Prof. STRUTHERS that the liver in the human subject is very unequally divided, the right lobe being much larger than the left, and he suggested that this might have some relation to the strength of the right hand as compared with the left. It was also stated that the old system of tight-lacing often introduced changes of form in the liver, and sometimes an additional fissure was in this way produced. Professor Struthers also brought before the Section a number of bones and dissections, showing the presence in the human arm of a supra-condyloid process, to which special interest attaches from its mention in Mr. Darwin's recent work. This little projecting spur, just above the elbow, occurs, Professor Struthers says, much more extensively than has been generally supposed. He finds it in about one case in fifty, and it may be observed in a very rudimentary state in almost every subject. It was impossible, he said, to explain this variation on the old ideas of final cause and type, and it was a strong piece of

evidence in support of the doctrine of evolution. In some animals the process had a specific function to fulfil, but in man it served no purpose whatever.

A Mr. G. HARRIS read a paper on "Renovation and Waste," in which he seemed to advocate the employment of some chemicals to keep the human body supple, and thus to prevent the unpleasantness of old age and death. Mr. LANKESTER, Dr. GAMGEE, and Dr. SANDERSON joined in a general protest against the feasibility of this hopeful prospect.

A very important report was read by Dr. RICHARDSON on the "Physiological Action of Organic Chemical Compounds." This report was the ninth of a similar kind communicated by the author to the Association. Some agents, it was shown, produce a form of paralysis of the blood-vessels of the lungs, leading to congestion of those organs. The effect of common alcohol was to produce diminished vascular tone, to lessen the recoil of the arterial system, and to set the heart unduly active by giving it a too unlimited freedom. Hence the dilated condition of the minute vessels in confirmed alcoholics; the diseased changes of structure in vital organs to which they are subject, and the insensibility which some of them show to congestive disease of the lungs and to pulmonary consumption. Other classes of agents were noticed to have an opposite effect upon the minute circulation. These increased the resistance of the vessels as well as the tension, and by so doing opposed, and even sometimes overpowered, the heart. The chlorides and some organic alkaloids were classified under this head, and the effects of these on the circulation through the lungs were carefully depicted. In the next part of his report Dr. Richardson described a series of new researches he had carried out with various representatives of the organic class. He commenced with observations on the action of hydrogen; then, in turn, of oxalic ether; carbonic ether; ethyl-methyl ether; bromine, a new series of organic bromides, and mandragora. In this section of the report the new ether, called ethyl-methyl, was defined as a safe and excellent anæsthetic that might be used with success for preventing the pain of surgical operations; and the element bromine was shown to be an active destroyer of animal tissues, and in this way had been found of service in the treatment of cancer. An interesting portion of the report related to mandragora. A wine made from mandragora root was noticed in the third year of the Christian era by Dioscorides as forming a draught to be taken before a surgical operation, in order that the patient, thrown into a deep sleep, might be operated upon without pain. The same substance was also given in order to produce prolonged sleep, and some ancients used the wine as some moderns now use opium, to produce habitual unconsciousness. For centuries mandragora was in use, and poets, physicians, and historians refer to it. Juliet is made to drink the draught of mandrake, and it is of it Macbeth says:—

The insane root  
That takes the reason prisoner

In the present year Dr. Richardson has reinvestigated the action of mandragora, and he reported that, although the use of the substance had been lost in scientific medicine for several centuries, the ancient views as to its potency were correct; that a wine or tincture would induce a comparatively safe and insensible sleep, during which pain could not be excited, and that a large dose would produce a long sleep, resembling very closely death itself. Even the state of terror, or temporary madness, in which persons who have partaken of mandrake were said to awake from their dream was probably quite true. It was a question whether mandragora would ever again take the place it held so long, as an annihilator of pain, for now we had many readier and perhaps better substitutes. But it was of great interest to know that the history of its action was true, while it was most singular as a matter of history that an agent so powerful, and supplying an art so beneficent, should have completely fallen out of favour, and almost of knowledge, since the revival of learning. The final part of Dr. Richardson's report was suggestive of new lines of research, based on what had already been observed. He proposed, in this direction, a classification of organic compounds for physiological purposes, according to their action as reducers or promoters of vascular tension. He proposed also a classification based on the solubility or the insolubility of different



ents, and he recommended a further investigation of the question of introducing all organic substances intended to act upon the system by the lungs; i.e., by the absorption of them directly into the blood through the pulmonary circulation, or by injection under the skin. A complete knowledge of the administration by these methods would, he believed, under the action of remedies precise, and make the recovery from certain acute maladies an immediate process scientifically determinable.

Dr. EDWARD SMITH, F.R.S., read a paper on "Preserved Foods," for which he deserves but little credit. He tried to show that preserved milk was very dear, that preserved meat was not cheap, and that Liebig's extract was almost valueless, and "extremely dear." Unfortunately, facts are against Dr. Smith, and therefore his sensational attempt to upset well-established conclusions has done little injury except to his own reputation. His papers drawn forth an undeserved compliment, however, in the shape of a letter published in the *Times*, written by Liebig himself. It is needless to say that Dr. Edward Smith's paper makes a very small meal for the great German chemist, who shows that extract of meat is of quite another service physiologically than mere nutrition.

A discussion on "Polygamy" was introduced by Mr. HYDE ARKE, and the conclusion arrived at by that gentleman was that, all things being equal, the greatest number of children would result from the single husband and single wife. It is open to discussion whether, if Mr. Clarke's conclusions are correct, polygamy would not be a desirable reform. Mr. Frank Fellows said that, as far as statistics could be relied on, there were 100 men born to 99 women, but the proportion of births restored the balance. Women lived to a greater average age than men, because men were liable to more casualties. It therefore appeared to be a necessary consequence that, if a number of men took more than one wife, the men must go without wives. Polygamy must lower the population and the energy and power of a people.

We are not inclined to report the great event of the geographical Section, namely, the speech and paper of Mr. ARNLEY, for the simple reason that everybody who is worth anything for knows all about that already. The professional geographers must do something soon, or we shall hardly tolerate their presence in the British Association. Mr. Arnley's investigations have been more interesting to the world than all their professional criticisms. Mr. EDWARD TON, reported the discovery of gold in regions north of the Limpopo, South Africa. We gather from his description that the country has many drawbacks to balance this session. There was a very interesting communication from Dr. GINSBURY on the geography of Moab, a part of the world lying just outside the route of Holy Land tourists. Several papers and a businesslike discussion occurred respecting the proposed railway to India, which will some day be accomplished. It will be in existence long before the Channel tunnel scheme is started, and passengers for Bombay or Calcutta will be able to sweep across Europe, scale the breezes of the Black Sea, break the journey at Babylon, Bagdad, or the Garden of Eden, bathe in the phraters or the Tigris, and get acclimatised, in the time of a journey to India now occupies.

A paper sent by Captain SHERARD OSBORN, urging another expedition to the Arctic seas in 1873, led to an interesting discussion on Polar exploration. A general agreement existed among the geographers that there must be an open sea during the polar summer, which was considerably strengthened by some remarks from Professor NEWTON, who referred to a bird called the "kust," which, visiting our shores in autumn, returns to the North to breed in the spring. From what is known of the habits of these birds, it is probably clear that there must be a rather warm climate in the northern seas, with some land.

Mr. SHAW, the Asiatic traveller, read a paper on the "Amir Steppes," the "roof of the world," as it is called by the neighbouring nations. The Persian and Hindoo race trace their origin to this mysterious region, which no European traveller has ever been able to penetrate. Hayward spent his life in the attempt. The inhabitants are a race springing entirely from the surrounding Tartars, having fair and hazel eyes, and with refined and handsome features. Their language is derived from the Sanscrit.

A paper on Jeddo was read by Mr. SAMUEL MORSEMAN, in

the course of which the Japanese Embassy visited the section. Jeddo is twenty-four English miles in circumference, and its area about thirty-six square miles, while the area of London covers a superficies of fifty square miles. Jeddo is entitled to rank among the great cities of the world, and to the Japanese it is what Paris is to the French and London to the English—luxury, arts, and amusement being found there in the highest degree.

In Section F (Economical Science) a shameful amount of time was courteously given to Miss E. A. SHIRREFF to read a paper on the Work of the National Union for Improving the Education of Women. We say shameful, simply because the object contemplated is to establish a company (limited) which, it is hoped, will swamp the private ladies' schools throughout the country, and pay a good dividend. With all respect for Miss Shirreff's arguments, we cannot appreciate the justice of letting a powerful company have such an opportunity to advertise, and though her ideas on the education of women may be excellent, we think she ought to advocate them in the legitimate way.

There are a few people in the world who would die happy if the metric system could be universally introduced. Some of these have formed a committee of the British Association, and from the report which they presented we gather that they fondly imagine they are succeeding in their aims. England and Russia are the two chief obstacles left. The adoption of the report was moved, but Mr. Franklin judiciously pointed out that in view of the considerable difference of opinion which still existed, it would be preferable to "receive," and not to "adopt" the report, which suggestion was followed.

In the Section of Mechanical Science we may mention an important paper by Mr. T. RANSOME, A.I.C.E., on "Artificial Stone." The author detailed his experiments and failures, and stated that he had at last succeeded in manufacturing an artificial stone. He had found a peculiar siliceous mineral at the base of some of the chalk hills of Surrey, which, among other properties, was readily soluble in solution of caustic soda, at a moderately low temperature. He combined a portion of this Farnham stone, or soluble silica, with a solution of silicate of soda or potash, lime (or substances containing lime), sand, alumina, chalk, or other convenient and suitable materials, which, when intimately mixed, were moulded into the required form as heretofore, and allowed to harden gradually, as silicate of lime was formed by the combination of the ingredients present. The mass then became thoroughly indurated and converted into a compact stone, capable of sustaining extraordinary pressure, and increasing in hardness with age. This artificial stone had been found practically to withstand the atmospheric changes of various climates, having been exposed to the cold of Russia, and the heat and rains of India. In general appearance it bore such a perfect resemblance to the best description of natural stones, as to mislead the most critical observers, whilst there was ample facility of application and economy in use. Having explained the manufacture and chemical composition of the several descriptions of artificial stone he had alluded to, the writer concluded by submitting that, both constructively and ornamentally, apenite (as he calls his invention) was eminently fitted to meet the numerous requirements of the engineer and architect, and so to subserve many useful and important purposes in the industrial arts.

Mr. C. A. BOWDLER brought up the subject of "Aërial Navigation" by suggesting that balloon manoeuvres should be included in the programme of the autumn picnic for our army. Mechanicians seem to hold out very little prospect of accomplishing much good in the air. No steam machine can ever be made light enough to be carried, and manual power can never accomplish more than two or three miles an hour.

A MEETING of assistants and apprentices of chemists and druggists in Sheffield was held in the rooms, Music Hall, Surrey-street, on Thursday night, for the purpose of inaugurating a society to be called "The Pharmaceutical Students' Association." Mr. E. R. Learoyd was appointed president, Mr. James Appleton secretary and treasurer. A general committee was also formed. Mr. Bradwall has kindly consented to give the opening paper of the session.



## ON PUTREFACTION.\*

BY DR. F. GRACE CALVERT, F.R.S.

THIS paper is intimately connected with those I have already published on protoplasmic life, and the influence it exerts on putrefaction.

I have already shown that when albumen from a new-laid egg is introduced into *pure distilled water*, and communication with the atmosphere prevented, protoplasmic life does not appear. If the same solution, however, be exposed to the atmosphere for from fifteen to forty-five minutes, minute globular bodies appear, having an independent motion, which I denominate monads. The time required varies according to the time of the year, the amount of moisture present in the atmosphere, and the temperature.

Although M. Pasteur has already noticed the meteorological conditions which influence that life, he has not noticed the extraordinary rapidity with which the fluids are impregnated, and that this impregnation is proportional to the surface exposed.

On the 18th May, 1871, two portions of albumen, measuring 400 grains, were placed, the one in a test tube, having a diameter of three-quarters of an inch, the other in a test glass, which at the surface of the liquid had a diameter of two inches. In the tube vibrios appeared after twelve days, whilst in the glass only five days were required for their development. If in place of pure distilled water the water supplied by the Manchester corporation (which is one of the purest waters in England) was used, the time required for the development of vibrios in a test tube was only twenty-four hours.

These experiments prove that the rate of development of vibrio-life is influenced by the extent of surface exposed.

M. Pasteur has already demonstrated that oxygen is essential to the life of the Mucedines, but I am not aware that it has been proved that this gas is necessary to the existence of vibrio-life.

In the hope of throwing some light on this subject the following experiments were made:—

Into each of five glass bulbs equal volumes of a solution of albumen, in Manchester water, were placed, and the first left in contact with the atmosphere for twenty-four hours, after which the ends of the tube were hermetically sealed about two inches on each side of the bulb. After passing oxygen, hydrogen, nitrogen, and carbonic acid over the other four solutions, the tubes were also hermetically sealed. These tubes were kept closed for twenty-seven days, during which it was observed that the albumen in the bulb containing oxygen speedily became turbid; then the one containing air, while the other three remained clear. After this period the tubes were broken, and the contents examined. A large quantity of vibrio-life was found in those containing oxygen and common air, whilst those containing nitrogen, carbonic acid, and hydrogen contained very small quantities, that with hydrogen the least—thus proving that oxygen is an essential element to the production of putrefactive vibrios.

In further support of this view, I may state that under certain conditions these animalcules produce such an amount of carbonic acid and other gases as to exclude oxygen to such an extent that their own development and life are impaired.

This is easily proved by taking albumen full of animalcules, but not emitting any putrid odour, and placing it in test tubes, closing some and leaving others open. If these tubes are examined after a few weeks, it will be observed that in those left in the air life has much increased, and they emit a very putrid odour; whilst the life in the closed tubes not only has not increased, but appears to be in a dormant condition; for if the corks are removed and the fluid again comes into contact with the oxygen of the air, its activity returns. The albumen also in the closed tubes does not emit any putrid odour.

M. Pasteur has also found that oxygen was necessary to the vibrios of putrefaction, although the same gas destroyed those produced in butyric fermentation; but he has not made any experiments to show that the products emitted

by such vibrios are prejudicial to their development, and even to their power of locomotion.

Having stated above that liquids exposed to the atmosphere become impregnated with monads, I will now try to describe their gradual development into vibrios, and their ultimate transformation into microzyma.

A few hours after the albuminous fluid becomes impregnated, the monads, which have a diameter of about 1-128,000ths of an inch, appear to form masses. Then some of the monads become elongated into vibrios, which, though attached to the mass, have an independent motion, so that as the force exerted by the vibrios predominates towards one or another direction, so is the mass moved over the field of the microscope. As the development proceeds, the mass is broken up, and ultimately each vibrio has an independent existence, and may be seen swimming or rolling about in the fluid. Their size at this stage is about 1-20,000th of an inch. These, which I call ordinary vibrios, gradually grow into long vibrios, which attain a length of 1-6,400th of an inch.

These long vibrios gradually become changed into cells, which I have called microzyms. The first process in the transformation is its division into two independent bodies. One extremely faint line appears across the centre of the animalcule, and increases in distinctness until the vibrio appears like two smaller vibrios joined together. The separation takes place, and each part acquires an independent existence. These parts again divide, and the process of subdivision is carried on until they appear to be nothing more than cells, which have a swimming-power so great as to pass over the field of the microscope with rapidity.

After twelve or eighteen months all the vibrios disappear, and are replaced by microzyms, either in motion or at rest. If these microzyms are placed in a solution of fresh albumen, vibrios are abundantly developed. The apparent explanation of this fact is that in the fresh albumen they have all the circumstances favourable to their growth and reproduction, while the putrid albumen has become so completely modified as to be incapable of affording them the requisite conditions for reproduction.

I may also notice that, at the same time, a deposit has taken place, which, under the microscope, appears to consist of shoals of small particles of matter which have no life. The solution has now become perfectly clear, possesses considerable refractive power, and has lost the property of becoming coagulated by heat.

The albumen solution does not emit a putrid odour until after the formation of the above-mentioned deposit, and the amount of odour is in direct ratio to the number of vibrios present.

I remarked during the investigation the presence of several other forms of animalcules which contribute to the decomposition and putrefaction of proteine substances, the description of which will be found in the original memoir.

*On the relative Power of various Substances in preventing Putrefaction, and the Development of Protoplasmic and Fungus Life.*

To carry out this series of experiments, small test-tubes were thoroughly cleansed, and heated to a dull redness. Into each was placed twenty-six grammes of a solution of albumen, containing one part of white of egg to four parts of pure distilled water, prepared as described in my paper on protoplasmic life. To this was added 1,000th or 1-026 gramme, of each of the substances, the action of which I desired to study.

The reasons why I employed one part in a thousand are twofold. First, the employment of larger proportions would, in some instances, have coagulated the albumen; secondly, it would have increased the difficulty of observing the relative powers of the most efficacious antiseptics in preventing the development of the germs of putrefaction or decay.

A drop was taken from each of the tubes and examined under a microscope, having a magnifying power of 800 diameters. This operation was repeated daily with the contents of each tube for thirty-nine days, and from time to time for eighty days. During this time the tubes were kept in a room, the temperature of which did not vary more than 3°—namely, from 12°5' C. to 15°5' C.

In order the better to show the influence of the antiseptics used, I examined two specimens of the same solution at

\* Abstracts of Papers read before the British Association.



the same time, one of which was kept in the laboratory, the other in the open air. A marked difference was observed in the result, the one kept outside becoming impregnated with animal life in less than half the time required by the other, while as many vibrios were developed in six days in the tube kept outside, as were developed in thirty days in the tube in the laboratory. A summary of the results of experiments is given in the following table, in which the substances are grouped, according to their chemical nature:—

	Days required for the Development of		
	Fungi.	Vibrio.	Putrid Odours in Albumen, kept at 80°.
1. STANDARD SOLUTIONS.			
Albumen kept in laboratory for comparison	18	12	16
Albumen exposed outside laboratory ..	None.	5	—
2. ACIDS.			
Phosphorous Acid .....	21	11	45
Phosphoric Acid .....	9	9	16
Hydrochloric Acid .....	10	10	16
Acetic Acid .....	18	22	None.
Benzoic Acid .....	9	30	None.
Sulphuric Acid .....	None.	9	35
3. ALKALIES.			
Sodium Bicarbonate .....	18	24	72
Potash .....	16	26	85
Ammonia .....	20	24	26
Lime .....	None.	13	14
4. CHLORINE COMPOUNDS			
Solution of Chlorine .....	22	7	16
Sodium Hypochlorite .....	19	14	16
Do. Calcium .....	18	7	11
Do. Aluminium .....	21	10	16
Do. Zinc .....	53	None.	38
Solution of Mercury .....	81	None.	None.
Solution of Lime .....	16	9	9
Solution of Potash .....	19	17	38
5. SULPHUR COMPOUNDS.			
Solution of Lime .....	19	9	14
Sulphate of Iron .....	15	1	16
Hyposulphite of Lime .....	18	11	16
Sulphite of Soda .....	18	11	11
6. PHOSPHATES.			
Sulphate of Soda .....	17	13	16
Do. Lime .....	22	7	16
7.			
Manganate of Potash .....	22	9	11
8. TAR SERIES.			
Carbolic Acid .....	None.	None.	None.
Creosotic Acid .....	None.	None.	None.
9. SULPHOCARBOLATES.			
Sulphocarbonate of Potash .....	17	18	35
Do. Soda .....	19	18	26
Do. Zinc .....	17	None.	None.
10.			
Solution of Quinine .....	None.	25	None.
Do. Acid .....	19	17	26
Do. .....	None.	8	16
Turpentine .....	42	14	35
11.			
Coal .....	21	9	None.

Comparing the results stated in the above table, the substances can be classed under four distinct heads, viz.:— those which prevent the development of protoplasmic and animal life; those which prevent the production of vibrio life; those which permit the production of vibrio life, but prevent the appearance of fungus life; and those which do not prevent the appearance of either protoplasmic or fungus life. The first class contains only two substances, carbolic and creosotic acids. The second class, also, there are only two compounds, sulphate of zinc and bichloride of mercury.

In the third class there are five substances, lime, sulphate of quinine, pepper, turpentine, and prussic acid. In the fourth class is included the remaining twenty-five substances. The acids, while not preventing the production of vibrio life, have a marked tendency to promote the growth of fungus life. This is especially noticeable in the case of sulphuric and acetic acids. Alkalies, on the contrary, are not favourable to the production of fungus life, but promote the development of vibrios.

The chlorides of zinc and mercury, while completely preventing the development of animalcules, do not entirely prevent fungus life; but I would call special attention to the interesting and unexpected results obtained in the cases of chlorine and bleaching powder. When used in the proportion above stated they do not prevent the production of vibrio life. In order to do so they must be employed in excess, and I have ascertained, by a distinct series of experiments, that large quantities of bleaching-powder are necessary. I found that part of the carbon was converted into carbonic acid, and that part of the nitrogen was liberated. If, however, the bleaching-powder be not in excess the animal matter will still readily enter into putrefaction. The assumption on which its employment as a disinfectant has been based, namely, that the affinity of the chlorine for hydrogen is so great as to destroy the germs is erroneous. The next class to which I would call attention is the tar series, where neither the carbolic nor the cresylic acid fluids gave any signs of vibronic or fungus life during the whole eighty days in the course of which the experiments were conducted.

The results obtained with sulphate of quinine, pepper, and turpentine deserve notice. None of them prevent the development of vibrio life, but sulphate of quinine and pepper entirely prevent the appearance of fungi. This fact, together with the remarkable efficacy of sulphate of quinine in intermittent fever, would lead to the supposition that this form of disease is due to the introduction into the system of fungus-germs, and this is rendered the more probable if we bear in mind that these fevers are prevalent only in low, marshy situations, where vegetable decay abounds, and never appear to any extent in dry climates, even in the midst of dense populations, where ventilation is bad and putrefaction is rife.

The results obtained in the case of charcoal show that it possesses no antiseptic properties, but that it prevents the emanation of putrid gases owing to its extraordinary porosity, which condenses the gases, thus bringing them into contact with the oxygen of the atmosphere, which is simultaneously condensed.

The above results have been confirmed by a second series. A series of experiments was also undertaken, substituting gelatine for albumen, and was continued for forty-seven days. Vibrios appeared in two days in the standard gelatine solution, and bacteria after four or five; and during the whole time of the experiment life was far more abundant than in the albumen solution. A distinct putrid smell was emitted after twenty-six days.

With bleaching-powder it took twenty days for life to appear, instead of seven as in the case of albumen; while at no time during the twenty-seven days which remained was life abundant. No putrid odour was emitted, but a mouldy one could be detected on the thirtieth day.

With chlorine solution vibrio life was observed only after forty days; no putrid or mouldy smell was given off at any time.

The protosulphate of iron gave, with this solution, results quite different from those with albumen, in which, it will be remembered, vibrios appeared in seven days, and fungi after fifteen; whilst with gelatine neither protoplasmic nor fungus life appeared during the time the experiments were continued.

Another substance, arsenious acid, also presented a marked difference in its action in the two solutions; for although with albumen twenty-two days elapsed before vibrios were present, and eighteen before fungi, with gelatine animal life appeared after two days, and at no time did any fungi exist. The effects of the other substances with gelatine were so similar to those with albumen, that it is unnecessary to state them here.



*On the Relative Power of Various Substances in arresting Putrefaction and the Development of Protoplasmic and Fungus-life.*

This series of experiments was undertaken as being complementary to those described in my last paper, and consisted in adding to a solution of albumen, swarming with microscopic life, 1,000th part of the substances already enumerated in that paper; and examining the results produced immediately after the addition of the substances, and after one, six, and sixteen days; but in this abstract only the results obtained in the first and last cases will be noticed.

The solutions were placed in test tubes similar to those described in my last paper.

The experiments were begun on the 20th September, 1871, the solutions being kept at a temperature of 15° to 18° C.

In the standard solution the amount of life and putrescence increased during the whole of the time.

The first class includes those substances which completely destroyed the locomotive power of the vibrios immediately, and completely prevented their regaining it during the time the experiments were conducted:—Cresylic acid.

The second class contains those compounds which nearly destroyed the locomotive power of all the vibrios present when added, and afterwards only one or two could be seen swimming about in each field:—Carbolic acid, sulphate of quinine, chloride of zinc, and sulphuric acid.

The third class are those which acted injuriously on the vibrios on their addition, leaving only a small number retaining the power of swimming, but which allowed the vibrios gradually to increase in number, the field, nevertheless, containing less life after sixteen days than the standard albumen solution:—Picric acid and sulpho-carbolic acid.

The fourth class includes those substances which acted injuriously at first, but permitted the vibrios to regain their former locomotive power, so that the fluid after sixteen days contained as much vibrio-life as the standard putrid albumen:—Chloride of aluminium, sulphurous acid, and prussic acid.

The fifth class contains those compounds which acted injuriously at first, destroying the locomotive power of most of the vibrios, but which afterwards permitted the vibrios to increase more rapidly than in the standard albumen solution:—Bleaching powder, bichloride of mercury, chlorine solution, caustic soda, acetic and nitric acids, sulphate of iron, and the sulpho-carbolic acid of potash and soda.

The sixth class contains those compounds which exercised no action on the animalcules, either at first or after sixteen days:—Arsenious acid, common salt, chloride of calcium, chlorate of potash, sulphate of lime, bisulphite of lime, hyposulphite of soda, phosphate of lime, turpentine and pepper.

The seventh class includes those substances which favour the production of animalcules and promote putrefaction:—Lime, charcoal, permanganate of potash, phosphate of soda, and ammonia.

### EARNEST STUDY.

*Inaugural Address at the opening of the Pharmaceutical Session 1872-73, October 2, 1872. By W. W. STODDART.*

MR. PRESIDENT, LADIES, AND GENTLEMEN,—

THE greatest pleasure any one can enjoy is the companionship of those who are following the same pursuits, or working out the same investigations, whether in the field of science or of literature.

In that position I am placed this evening, having been requested by your Council to address you, with the view of offering a few suggestions as to the best mode of studying the various branches of pharmaceutical education, and thereby ensuring the greatest success. I must confess, however, that I have undertaken the task with very conflicting feelings. On the one hand, I experience some considerable trepidation, lest I fail to fulfil the duty intrusted to my care; while, on the other, I have the satisfaction of knowing that I am in every respect a fellow-student, and therefore can

understand and enter into your many difficulties. Whether or not I remove any, will be for you to decide.

I suppose that all of you are anxiously looking forward to the time when, in after life, you will realise the results of the present careful teaching and training.

Proper food is as indispensably necessary for our mind as for our bodies; and the quality of that food will as surely determine the future development of the one as of the other. If you are content to feed your mental lives with worthless literature, you will most assuredly enervate your powers of thought and judgment; but, on the contrary, if strengthened by appropriate reading and a judicious selection of all that is valuable and useful, you cannot avoid ensuring a vigorous intellect. It will enable you to hold your own among your fellow-men, to arrive at the decision of difficult points which will often arise in your daily occupation, and perhaps to guide your brother pharmacists through many a labyrinth which would otherwise end in a disastrous failure.

Everything in this life if neglected will naturally retrograde and decline into sterility and desuetude. God has given us minds, and intrusted them to our care, and if we do not cultivate them, and thereby widen the sphere of thought, we most assuredly neglect a very solemn duty, and prove ourselves unworthy of the gift.

Not one of you is born to live alone, or for yourself only; nor can you, whether you wish it or not, avoid making some impression on your companions, either for good or evil. I suppose the great majority of pharmacists are obliged to work hard for their daily bread, and to supply the common necessities of life for those who are near and dear to them. Experience has repeatedly proved that the much coveted competence—if such a thing be possible for a druggist—will be attained in proportion to the perseverance and to the intelligence evinced by the skill and knowledge of our craft.

Education is very often confounded with teaching, and the error is as great as it is popular. Education is a final result, that is only obtained from a certain amount of labour, especially if facilitated by faithful and able teachers; but do not deceive yourselves in this matter, for it is possible for you to have at your command the most competent professors the world can produce, and yet fail in gaining the least advantage. And why? Because their instructions have not been accompanied by your own individual efforts. You must build your own edifice, and no one else can do it for you; and as with a material building, it is indispensable that you go to a proper quarry, hew the stones with a practised hand, and gradually place layer upon layer, according to a preconceived plan; so it is with your educational structure. The old saying that "what a man sows, that shall he also reap," applies exactly to your case; and just in proportion to the labour bestowed, and the quality of the seed sown, so will the harvest be. There will be no harvest if the seed be not properly sown.

If we were able to obtain the result of every day's work, we should be surprised to find how large a proportion of that work is accomplished by men whose hours of study are in the midst of apparently uncongenial occupations, and who can only make use of a few precious half hours, and those, perhaps, taken from their periods of rest. Nay, more, I believe the man who is occupied the most with daily labour is the one who does the most towards the completion of his own education and the good of his fellow-men. Faraday, William Allen, Miller, and Stephenson were bright examples of those who never could be accused of wasting a single spare moment.

One great, if not the greatest reason why so few shine out from the general mass, is the want of *observing power*. One of the first things a pharmaceutical student has to learn, is to make proper use of his eyes. This elementary lesson, I am sadly afraid, is too frequently omitted from the curriculum of many an eminent professor. A teacher cannot be too simple or too practical. When once the eye is trained, the slightest deviation from the ordinary course instantly arrests the pharmacist, and calls forth the "why and wherefore" inquiry into every-day occurrences, which are passed by unheeded, simply because they are so familiar. I will give you an illustration or two of what I mean. Most of you, and many thousands more, who have studied chemistry, have made hydrogen gas by dissolving a piece of zinc in diluted sulphuric acid, and have seen the sediment that re-



ains in the solution of zinc. How invariably has this bit of dirt been thrown away as not worth a moment's consideration, or without the slightest idea of inquiring what it is? Nevertheless, nine years ago, Drs. Reich and Richter found this insignificant-looking sediment contained the new element, Indium, especially when the zinc came from the Freiberg mines.

Another still more remarkable instance occurred in the case of Thallium. For many years past, the waste dust had been collecting in the flues of vitriol factories without attracting attention, till Mr. Crookes chanced to examine it, when, to his utter astonishment, he found it to contain no less than the twelfth part of its weight of this curious metal; another new element unique in its properties, both optically and chemically. As you know, its spectrum differs from that of every other body, by a magnificent green band when united, and exhibiting the most perfect example of monochromatic light yet discovered.

Nor is there any occasion for you to go to the sulphuric acid manufactory for your material. If you will examine the bismuth, the chloride of zinc, or the hydrochloric acid on your shelves, you will most likely find this extraordinary body to be present in sufficient quantity to develop its spectral phenomena.

How many hundreds of mixtures have been dispensed with quinine, but how few of you have, perhaps, asked for an explanation of that grand fluorescence that always makes its appearance, or, supposed you were looking at one of the most marvellous displays of force that chemical physics has ever striven to elucidate? When, however, the eye has been trained to notice the many reactions that occur daily in our pharmacies, the aptitude for education is wonderfully increased.

Is it not to be feared that the tuition in most of our schools and colleges is too exclusively based on the reasoning and not on the perceptive powers of the mind? If so, the inference must be, that the knowledge acquired will be theoretical instead of practical, the library being too much employed and the laboratory too little. I would, therefore, my friends, sincerely urge you to experimentalize, to examine for yourselves, and not to take everything for granted that you hear. You will quickly find that what you once thought a distasteful task, becomes a delightful pleasure.

A good criterion that you are becoming acquainted with your studies, is the conviction that you yet know but little of the broad field before you, and become cautious of the many pitfalls that await those who in their foolish pride think they know all.

"A little learning is a dangerous thing;  
Drink deep or taste not the Pierian spring;  
For scanty draughts intoxicate the brain,  
But drinking largely sobers us again."

You will all have many difficulties and trials to surmount, but then they will be counterbalanced by many commensurate privileges. You are like a traveller in a strange country, and surrounded by innumerable objects of beauty and interest. Now stopped by some deep crevasse or rapid stream, now by some deep ascent or slippery rock. Sometimes the flora of some exquisite glade or the fauna of an extensive forest will arrest the attention. Would an enthusiastic naturalist, do you think, be daunted by such difficulties, or turned back by such obstacles? Decidedly not. On the contrary, he would be only stimulated to make more strenuous efforts to fill his vasculum, or complete his collection.

So is it with you, who are in the midst of equally fascinating objects, though you do not notice them from the before-mentioned familiarity. The exquisite tracery of a slice of rasparilla, liquorice, or columba, the wonderful optical powers of morphia and quinine, or the extraordinary structure of a mustard seed, a lupulinic gland, or the under side of a matice leaf, are only a few of the many examples that with the assistance of a common lens must astonish the most careless. Many of the most charming experiments that were ever exhibited by Faraday or Tyndall may be seen any day in a druggist's shop. Not many months ago I showed to a London optician the spectra of lobelia, digitalis, hyoscyamus, and cannabis, when he was struck with admiration, and declared he had never before seen anything half so beautiful, and asked if I would tell him how they were prepared. My young friends, need I remind you

that the answer to his inquiry was a reference to your old acquaintance, the British Pharmacopœia?

May I stop here to remark to my brother pharmacists how much good a master may do his pupil, if he would point out some of these wayside objects, and encourage an *esprit de corps*, instead of exacting the veritable pound of flesh, as is too commonly the rule? By so doing, the pupil would often ransack the materia medica with an eager zest, instead of a dogged resignation to what is thought an irksome duty. As Mr. Kingsley says, "A walk without an object, unless in the most novel and lovely scenery, is a poor exercise, and as a recreation utterly nil. If we wish to do our children any good, we must give them an object in every walk. We can teach them to find wonders in every insect, sublimity in every hedgerow, and by teaching them to make full use of the limited sphere in which they now are, to make them faithful in a few things, that they may be fit hereafter to be rulers over many."

But I think I hear some of you ask me if there can be much sublimity or many wonders in the rows of hottles with which you are so well acquainted. Stop a moment and consider. Use your observing powers, and invest a little money in that good educational assistant, a moderate microscope, and by its aid look again at these absurdly common things. What do you see? Why many, if not all, of these common drugs and chemicals, will fill a large cabinet with exquisite slides. Look, for instance, at the remains of former ages in the prepared chalk of the pretty button-like crystals in the carbonate of magnesia, the beautiful seeds of hyoscyamus, colchicum, linseed or poppy, the raphidian rosettes snugly placed in their little cells in the rhubarb, podophyllum or squill, the restless little nematoids on the vinegar tap, or the elegant fungus that grows and fructifies in the solution of emetic tartar. Time would fail me in anything like an attempt to describe the wonders contained in our bottles and drawers.

There is one warning that I am desirous to impress upon you with great earnestness, namely, the incalculable advantage of a systematic arrangement of your studies. I speak from experience when I say that a loose, indiscriminate manner of study is so much time lost. If you have ever so extensive a library, and dip at random into your Attfield, Bentley, Lindley, Fownes, and Royle, you will make a terrible mistake, and totally put a stop to profitable study. Should any of you attempt to pursue so erroneous a course, however industrious you may be, you will feel extremely uncomfortable when you have to face the Board of Examiners. You will resemble the poor fellows in the tower of Babel, so quaintly described by an old poet:—

"'Bring me,' quoth one, 'a trowel quickly, quick!'  
One brings him up a hammer. 'Hew this brick'  
Another bids; and then they cleave a tree.  
'Make fast this rope,' and then they let it flee.  
One calls for planks, another mortar lacks:  
They bear the first a stone, the last an axe.  
Thus crossly cross'd they prate and point in vain—  
What one hath made, another mars again.  
These masons then, seeing the storm arrived,  
Forsake their purpose, and, like frantic fools,  
Scatter their stuff, and tumble down their tools."

A method I have always found to work extremely well is to draw up a tabular arrangement according to circumstances. Botany for one day, chemistry for another, materia medica for the third, and stick to it. If you are prevented from enjoying the half hour allotted to Bentley pass it over and work with Attfield on the appointed day, but never upset the arrangement. Use every spare five minutes. You will never know till you try what a large amount of work can be performed in a few odd moments. Do not think because you cannot have a couple of hours at a time that you are, therefore, debarred from study. Where there is a will there is also a way. Not one of your predecessors ever had the advantages you possess, the books you have, or the class instruction now offered.

A great outcry is now being made for provincial education; but is there so much need for that extra machinery that many would have you believe? My own experience leads me to doubt it. Every master ought at any rate to be able to direct his pupil *how* to study, and then generally it must be the pupil's own fault if he do not succeed. One man may take a horse to a pond, but not all the energies of fifty can compel him to drink. But work with a firm determination to win, and then you will have no



apprehension when you have to meet those gentlemen who form the Board of Examiners. I believe that all the knowledge required to pass the Minor may be acquired by yourselves alone. Lectures and classes are, of course, great helps, and I would be the last to say anything that would tend to lessen the idea of their value. But do not think that genius or more than ordinary ability is required. It is the persevering, resolute, hard-working student that gains the Pereira medal. One who is really determined to reach the goal, and who, by accustoming himself to work, finds his studies become proportionally easier.

I hope all of you have embraced the study of pharmacy in its highest sense, and intend setting to work with brave, earnest and honest hearts. The knowledge you will thus have acquired will last you all your lives, and never evaporate like the temporary makeshift of the crammer. Our esteemed professors will welcome you, and take a delight and pride in guiding you forward with their lectures and their counsel; but I am sure they will tell you that their efforts must be supported by your own individual exertions. Indeed, the whole value of their lectures depends on the use you make of them. Chemistry must be learnt in the laboratory, botany in the field, and dispensing at the counter. A month of practice is worth a year of theory.

Do not think that when you have passed your examination you must put aside all your books, and have nothing else to do but to get a business. It is to you that we older ones look for the future prosperity of the Pharmaceutical Society. You, and not we, will be the gainers by its rise in the social and scientific scale. You will, I trust, see the day that we desire to see, when the examination fees will be cheerfully and gladly paid without thinking them too high, and will some day pass the bye-law enacting that the Major must be reached before being allowed to enter into what I hope will truly be entitled the profession.

We are often met by the old-fashioned assertion, that such an amount of scientific education will unfit you for the proper attention to business, and that you will become too proud for the ordinary duties of the retail counter. It is a very absurd idea; quite as much so as for you to think of commencing business without the necessary experience. I would be the last man in this room to slight business habits. On the contrary, I set the highest value on the young man, who, by punctuality and discriminating care, can show that he has an eye for business; but, on the other hand, I should think very little of an assistant who, however regular in his habits and correct in his accounts, was not able to give a sensible answer to the many unexpected questions that are daily asked by our customers. Would your dispensing powers be lessened by a fore-knowledge of the results of a mixture, and therefore of incompatibilities? Would you make any of the preparations the worse, because you knew the chemical laws that control the elements? Or would you be a worse judge of drugs, because your botanical knowledge taught you the characteristics of the medicinal herbs? It would be monstrously absurd to say so. An increase of knowledge will give you a most valuable power, applicable to every circumstance of civilized life. You will be a better tradesman, a better fellow-citizen, and a better pharmacist.

I cannot understand how any one having an acquaintance with the scientific explanation of what is going on around him at home, in the shop, or in the garden, can be content to eke out his existence with only studying the wholesale price list.

I must think better things of you, for it would seem incredible that you could have proved the friendship of such men as Professors Redwood, Atfield, Bentley, or Tilden, and the gentlemen I see around me, in vain. It is not possible that you could enjoy their acquaintance without having a more elevated idea of things than you had before you knew them.

In conclusion, I would again urge you to make full use of the coming session. You will find that when you leave Bloomsbury Square, it will have been no time or expense lost. Never condescend to lower your profession in the eyes of the public, but let them find out, as they very soon will, that you may be depended on for truth, integrity, and upright honesty: and, above all, a fixed determination to walk strictly in the path of duty.

The end will be that you will earn the greatest of all earthly rewards, a good name.

"A spotless name  
By virtuous deeds acquired, is sweeter far  
Than fragrant balsams, whose odours round diffused,  
Regale the guests. Well may such men  
Rejoice at death's approach, and bless the hours  
That end the toilsome pilgrimage; assured  
That till the race of life is finished, none  
Can be completely blest."

May such a lot be yours.



AIR GAS.

IF seeing is believing, we can have but little doubt of the value of a new invention which is about to be worked on a large scale in London. The Air Gas Light Company (Limited) has purchased from Messrs. Charles Weightman Harrison and Alfred Horatio Harrison certain patents for the manufacture of gas from the air. The process followed is extremely simple. An ordinary gas-washing bottle is partially filled with a liquid termed "gasogen," which is a hydro-carbon distilled from some of the mineral oils, and in which certain resins have been dissolved. One neck of this bottle is left open, and another is connected by a tube with a gasometer. The weights being attached to the gasometer raise it, and in order to fill the vacuum air must needs rush through the liquid. In passing it abstracts some of the hydro-carburetted gas, and arrives in the gasometer perfectly ready for burning. The company state that a gas giving a light equal to thirty sperm candles can be manufactured by this process for 8d. per 1000 feet. The simplicity and cheapness of manufacture, the freedom from deleterious impurities, and the universal application of which it is capable, as, for example, to ships, country houses, etc., are the most obvious advantages of this invention. We have witnessed the gas manufactured as we have described, and immediately afterwards burned, and as far as we could judge by daylight a most excellent light was yielded.

#### LINI FARINA.

Most chemists and druggists will remember a paper read by Mr. Greenish to the Pharmaceutical Conference at Edinburgh in 1871. It will be found in the CHEMIST AND DRUGGIST for August, 1871. Mr. Greenish drew attention to the very unsatisfactory character of the linseed meal usually met with in chemists' shops. It is either an almost valueless powder of the linseed cake, or it is an inellegant, greasy powder, mixed with a quantity of husks, and often with irritating matter, which may do considerable mischief. He indicated a want, and a firm of seed-crushers at Glasgow and Edinburgh has taken the hint and produced a "Lini Farina," in every respect satisfactory. The sample sent to us by the firm referred to (Messrs. Robert Lockhart, Jun., and Co.) is unquestionably the best linseed-meal we have ever seen. It is from a seed rich in farina, possesses just enough oil, and yet is not greasy. A fair quantity of the husk has been removed from it. When mixed with water there is no pungency showing the absence of cruciferous seeds, neither is there under the microscope any indication of the presence of other weed seeds. It fulfils the requirements of the British Pharmacopæia, and will do credit to any pharmacy. We may add that, in examining it, we have been favoured with the assistance of Mr. Greenish himself, and these remarks convey his opinion as well as our own.



## AMERICAN CONCENTRATED BOTANICAL MEDICINES.

In the United States during recent years, the employment of concentrated botanical medicines has increased with remarkable rapidity, and the European demand has become really important. These preparations at first having credit with the eclectic practitioners of the United States only, have since, from the wonderful success and efficacy of several such as Podophyllin, Leptandrin, Hydrastin, Macrotin, Felsenin, Sanguinarin, etc., gained extensive use among all schools of practice, though in somewhat different forms and methods of administration. In a great degree, the increasing lack of confidence felt in regard to the fluid extracts commonly in use, from their variable strength and quality, and the impossibility of being certain as to the freshness and proper selection of the roots, etc., used in their manufacture, as well as the great proportion of inert and often injurious material found in them, has given good ground for the belief that these powders containing *solely* the valuable properties of the plants, used in the form of tinctures by their redissolvment in alcohol, form a vastly preferable, because more certain mode of medication. And in the opinion of those of eminent skill in their manufacture, this form of manipulation would be incomparably better (except in those few cases where it is from chemical reasons inadmissible) for obtaining the virtues, unimpaired, of all botanical products. In the production of these specialties the alkaloids, resinoids, etc., the most popular houses, whose preparations are regarded as of great reliability and excellence, are Messrs. B. Keith and Co., and F. W. Hurtt and Brother, of New York city, whose advertisements appear regularly in the "CHEMIST AND DRUGGIST." Both houses are conducted upon correct principles, such as characterize business men of reputation, and chemists having duly in view fidelity to their most important profession. In the general botanical line, Messrs. William H. Peek and Co., the oldest and most experienced house in America, from long years of fair dealing and accuracy in a most difficult department, have the entire confidence of the American trade, and our advertisers afford to the English trade a means of direct communication, which we have reason to now may be depended upon implicitly.



### OUR DIARY FOR 1873.

WE have an unbound copy of our diary before us, and in a few days we expect to be prepared to supply copies to chemists who have ordered them. The cheaper ones will be a week or two later.

The diary pages are printed on excellent glazed paper, and are ruled, an improvement which we are convinced will meet the approval of purchasers. Following the diary pages will be found a novelty. It is a form drawn out to enable chemists to keep a record of invoice prices of the principal staples. This will be found extremely useful in the case of those which fluctuate in price, or in the case of certain articles which are of special importance. For example, a moment may occur when the principal wishes to ascertain what he last paid for opium; on reference to his diary, if the record has been properly kept, he will see at a glance, and the same chronicle will tell him when he bought it, and from whom. Four pages are occupied with this important design. Four pages follow which are ruled and dated for the whole year, as a record of daily and weekly returns, and quarterly statements. Four pages succeed ruled for "Stock Wanted." Then follow Accounts Payable, Accounts Receivable, Miscellaneous Addresses, Special Accounts, and Pharmaceutical Scraps. The objects of these will easily be

discovered, and we are quite convinced that the trade will find this diary a most indispensable memorandum-book. The literary space is well filled. It contains between 100 and 200 formulæ for all kinds of businesses. There are medical, perfumery, and miscellaneous formulæ. We have also a Dictionary of Incompatibles, which will be found most valuable to those who are frequently dispensing, and perhaps still more useful to those who are thus employed but seldom. There is much other information which we need not further particularize; but we launch this book in full anticipation that its popularity will this year be considerably strengthened and its sale extended. The best copies are 2s. each. The second quality 1s. each. The best copies are bound in cloth, are printed on superior paper, and are interleaved with blotting-paper. An extra 5d. must be remitted for the postage of the 2s. edition, or an extra 3d. for posting the 1s. copies; but we are willing to deliver copies to any City house for enclosure. Abroad the best edition only will be obtainable, and the price charged will be 2s. 6d. each; in the United States half a dollar. The following agents will have supplies:—Messrs. Felton, Grimwade, and Co., Melbourne; Messrs. Kempthorne, Prosser, and Co., Dunedin; Messrs. Kempthorne, Prosser, and Co., Auckland; Messrs. Evans, Mercer, and Co., Montreal; Messrs. Redington, Hostetter, and Co., San Francisco; Mr. P. M. Sherwood, 117, John-street, New York; Mr. W. M. Dickson, 619, Walnut-street, Philadelphia; Messrs. W. A. Weed and Co., River-street, Chicago.

### COOKED REVIEWS.

A PAMPHLET on "The Curability of Cancer" reached us lately, and on the wrapper was written "For Review, &c. 2nd edition of 20,000." Our readers will discover immediately for what reason this piece of rubbish escaped the usual fate of such productions. We propose to honour the author with a prominent "review," and a still more prominent "&c."

The title page reads as follows:—"On the Curability of Cancer, and its Medical Treatment without Surgical Operation. With Notes upon a New Mode of Treatment of Caries of the Bones. By Dr. G. von Schmitt. Translated from the French. Second edition. London: Printed and published for the author by Wyman and Sons, 74-5, Great Queen-street, Lincoln's-inn Fields, W.C. 1872. Price Two shillings and sixpence." This two-and-sixpenny pamphlet contains 52 pages of that kind of literature we know so well—an expanded style of handbill. It commences with general observations on cancer, proceeds to expatiate on the virtues of the California Plaster, the Calhazzer Ointment, the Ankat-Zakkit Pills, and the Karawaif Mixture, and concludes with a few "cases," the details of which this Schmitt, or Smith as we shall prefer to call him, "deems it necessary" to publish "in the interest of suffering humanity." We have now completed our "review," and turn with real disgust to "&c.," the production.

Just over Chapter I. we find the following in manuscript. We leave the Postmaster-General to decide whether it is a communication in the nature of a letter or not.

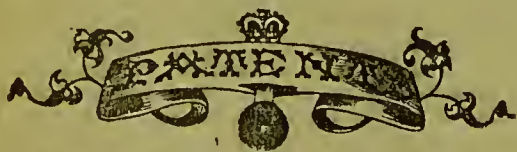
"N.B.—Some 250 Reviews of this 2nd Edition have appeared, and they are appearing daily.

"Send, please, copy of your Review and Tariff of Advertisements, and Dr. Schmitt will remit cash and orders on receipt."

As far as Smith himself is concerned, we have nothing more to say, except to advise him in future to ascertain whether any particular journal is conducted by gentlemen or by highwaymen, before he again ventures to insult the press with an offer to divide the spoil, won by his smartness from the hard-earned savings of, perhaps, some very poor sufferer, whose friends, scarcely able to obtain life's necessities, would yet gladly sacrifice much if they could be induced to believe that the afflicted one had any chance of obtaining relief. It is not so much against Smith as against a certain portion of the press itself that we wish to lift up our voice. We have no means of judging how far the statement is true which is here published, but if we assume the truth, we have a revelation of truly shocking laxity on the part of the editors of many journals, some of which have a con-



siderable circulation. We are told that, among others, certain English papers whose titles we will give immediately, "have published criticisms on Dr. von Schmitt or his works," and we are left to infer that such criticisms have been uniformly favourable. If this statement has any truth in it at all, the probability is that the editors of the papers named agreed to insert some apparently innocent paragraph just to give Smith a hit of a lift in return for his money. Little country papers, we know, are often open to corruption of that kind, but we should hardly have expected that respectable publications, as we believe some out of the following to be, would have lent themselves to such a transaction. The papers named are these:—The *Glowworm*, *Bell's Weekly Messenger*, *Lloyd's Weekly*, *City Press*, *News of the World*, *Brighton Daily News*, *Invalid's Guide*, *Weekly Dispatch*, *Doctor*, *Lady's Own Paper*, *International*. It is quite possible that many of these may have merely acknowledged the receipt of the publication—it is conceivable that some may have reviewed the pamphlet in a spirit similar to our own; but if they have done anything to help sell the pamphlet, or the Calhazzer Ointment, and particularly if they have done it in consequence of such a representation as that which has been made to us, we cannot acquit them of a carelessness amounting almost to a crime. They are in this dilemma—either they gave Smith a paragraph which was perfectly worthless, in which case they cheated him, or their paragraph was calculated to induce other persons, more ignorant perhaps than themselves, to spend some money on the faith of Smith's representations, hacked up by the authority of the journal, the latter receiving a share in the profits—not to describe the balance remaining by a stronger word—as payment for their complicity. If a hairwash, or a new collar, or a new sauce were the subject of the notice, we should not have written this article; but when we consider that a dreadful disease, that life and death themselves, are being wantonly played with, we cannot avoid the conclusion, and we think it our duty to point it out distinctly, that an editor who, for the sake of an advertisement amounting to a few paltry shillings or pounds, will give any aid to a quack system of which it is impossible he can understand anything at all, is either culpably careless in the performance of his duties, or, what is far worse, is so basely mercenary that the life, health, and happiness of others are nothing compared to the important object of making his paper succeed.



The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4, South-st., Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

1421. J. Robey, of Manchester. A new or improved filtering medium, suitable also as a disinfectant and deodorizer. Dated 10th May, 1872.
2266. R. Milburn, of Whitechapel, and H. Jackson, of Leeds. Improvements in apparatus for drying or pulverizing, or for drying and pulverizing sewage deposit, manure, cement, chemicals, grain, malt, and other like matters. Dated 30th July, 1872.
2328. E. Packard, junior, of Ipswich, Suffolk. Improvements in the manufacture of superphosphate of lime and artificial manure. Dated 3rd August, 1872.
44. C. Morfit, of Baltimore, U.S. Improvements in the chemical treatment of mineral and other crude phosphates of lime. Dated 7th August, 1872.
2346. J. R. Rowlett, of Dover, Kent. Improvements in machinery or apparatus for expressing or obtaining oil from seeds or vegetable substances. Dated 7th August, 1872.
2357. C. Morfit, of Baltimore, U.S. An artificial substitute for "Redonda guano," "Alta Vila" guano, and other natural phosphates of alumina, to be used in the defecation of sewage, in the manufacture of sugar from cane and beet root juices, and in the preparation of certain chemical products, such as pure alumina and the alkaline and earthy phosphates and aluminates. Dated 3th August, 1872.
2403. A. M. Clark, of London. A new or improved medicinal compound. Dated 12th August, 1872.
2446. A. R. Arrett, of St. Helens, Lancaster. Improvements in the manufacture of carbonato of soda. Dated 16th August, 1872.
2483. B. Hunt, of London. An improved physiological or "batten battery." Dated 21st August, 1872.

2493. G. Haseltins, of London. Improvements in electrical apparatus to be worn upon the head for the alleviation and cure of nervous affections. Dated 22nd August, 1872.
2496. M. H. Synge, of Pall-Mall. Improvements in deodorizing apparatus. Dated 22nd August, 1872.
2508. J. Mergan, of Dublin. An inhaler for medical purposes. Dated 23rd August, 1872.

Letters Patent have been issued for the following:—

664. E. M. Adams, of Chelsea. Improved galvanic apparatus to be used for curative purpose. Dated 4th March, 1872.
653. J. P. R. Pösch, of Brussels. New chemical compound for blasting purposes. Dated 2nd March, 1872.
715. J. Garneri, of Gracechurch-street. A new system or process for the production and decomposition of anhydrous chlorides, and apparatus for those purposes. Dated 8th March, 1872.
737. F. H. Ocloe, of Salford, Lancaster. Improvements in dentists' busts employed in the display of artificial teeth. Dated 11th March, 1872.
844. J. D. H. T. Decamps, of Paris. An improved suspensory apparatus for raising and supporting the sick or wounded and others. Dated 20th March, 1872.
880. H. Hollefrund, of Havelberg, Prussia. Improvements in the treatment of potatoes, maize, corn, millet, and other starch containing vegetable matters to obtain saccharine and other products therefrom, and in the apparatus employed therein. Dated 22nd March, 1872.
890. R. M. Letchford and W. B. Nation, both of Bethnal-green. Improvements in the treatment of Paraffine. Dated 23rd March, 1872.
914. J. H. Johnson, of London. Improvements in ice-cream freezers. Dated 26th March, 1872.
916. C. Allix, of Isle of Dogs, and H. Gardner, of Clifton-road. Improvements in stoppers, valves, or apparatus for closing the necks, mouths, or openings of bottles and other vessels, and in appliances connected therewith. Dated 26th March, 1872.
926. A. C. Henderson, of Charing-cross. Improvements in the distillation and filtration of fecal, solid, and liquid matters direct from privies for the manufacture of sulphate of ammonia, together with the apparatus therefor, the said process being equally applicable to the distillation and filtration of liquids of all kinds. Dated 27th March, 1872.
943. A. Beveridge, of Leith, Edinburgh. Improvements in preparing, cleansing, and refining animal fats, and in the means and apparatus employed therefor. Dated 30th March, 1872.
958. C. D. Abel, of London. An improved process for the preparation of acid phosphates or superphosphate of lime. Dated 1st April, 1872.
971. J. H. Johnson, of London. Improvements in liqueurs or cordials and other beverages, and in apparatus to be employed in their manufacture. Dated 3rd April, 1872.
1051. J. H. Johnson, of London. Improvements in the treatment of animal and vegetable substances. Dated 9th April, 1872.
1376. D. G. Fitzgerald, of North Brixton, and B. C. Molloy, of the Temple. Improvements in treating compound substances by the agency of electricity, and thereby decomposing them or resolving them into their components, and in apparatus employed therein. Dated 6th May, 1872.
1494. R. Porter, of Chiswick, and F. Porter, of Mincing-lane. Improvements in distilling, and in apparatus therefor. Dated 16th May, 1872.
1586. W. R. Lake, of London. Improved processes and apparatus for the extraction of oil and the production of flour from maize. Dated 24th May, 1872.

Specifications published during the month:—  
Postage 1d. each extra.—1872.

130. W. Davis. Vant-peg. 4d.
140. C. Morfit. Refining fat oils. 4d.
145. A. McDougall. Manufacture of sulphuric acid. 4d.
147. C. H. Mack. Artificial teeth. 6d.
154. A. S. Stoecker. Manufacture of articles for feeding-bottles, etc. 1s. 6d.
178. D. A. Doudney and another. Self-acting disinfectant for walking-sticks, etc. 4d.
190. P. Gaskell. Apparatus for drawing off liquids. 4d.
210. W. Bradburn. Applying acid fumes for dissolving phosphatic materials. 4d.
228. A. Ford. Treating seed and vegetable oils. 4d.
231. J. S. Crapper. Economising and administering nitrous oxide, etc. 4d.
248. H. Aylesbury. Stoppers for bottles. 8d.
272. W. G. Walker. Preserving food. 4d.
283. P. W. Seymour. Portable magnets. 6d.
305. J. A. Jacques and another. Surgical instruments. 4d.
317. W. Weldon. Manufacture of chlorine. 1s.
327. W. G. Curtis. Obtaining extracts or infusions, etc. 4d.
332. F. M. Franklin. Capsules. 4d.
354. W. Betts. Capsules. 6d.
358. E. Burgess. Evaporating and fuelnerating alkaline lyes or solutions, etc. 6d.
359. W. Weldon. Obtaining and decomposing sulphate of sodium, etc. 4d.
362. A. G. Bell. Galvanic belt. 10d.
376. H. A. Bonnevillie. Alimentary drink. 4d.
394. F. Taylor. Bedsteads for invalids. 4d.
404. J. H. Johnson. Producing alcohol, etc. 4d.
407. T. Gibb and another. Furnaces for carbonating alkaline salts, etc. 4d.
413. J. Young. Treating natural petroleum. 8d.
422. E. A. Cook and another. Treating hydrocarbon oils. 4d.
425. R. F. Smith. Obtaining yellow and red prussiates. 4d.
446. T. Me. M. Wilson. Refining and purifying oils. 10d.
418. S. Fildes. Clarifying waters, etc. 10d.
433. P. D. Deans and another. Producing sulphate of ammonia. 4d.
459. J. Young. Treating hydrocarbons. 4d.



## THE MONTH

WE have the pleasure to announce that we have added to our list of American agents the firm of W. A. Veed and Co., wholesale druggists' sundries men, Chicago, who will receive subscriptions and advertisements on our account.

The Pharmacutical Council at their October meeting issued the desirability of altering the examinations for the Bell Scholarship, a proposal to pay fees to local secretaries for the preliminary examination, and a suggestion of Mr. Frazer's to reduce the examination fees. No definite conclusion was arrived at on either of these subjects. The society's solicitor read an opinion which he had drawn up, to the effect that pharmaceutical chemists and chemists and druggists are eligible for appointment as local analysts under the Adulteration Act. It was also resolved that ladies who may wish it should be admitted to the lectures, but not at present to the laboratory of the institution. Among other business transacted at the same meeting, Mr. John Moss, M.C.S., was appointed Demonstrator of Practical Chemistry to Dr. Tilden. The resignation of Mr. Augustus Bird as examiner was tendered, and accepted with regret. The name of Thomas Holden, of Burnley, was erased from the register.

The theatre at Bloomsbury Square was crowded on the evening of October 2, to witness the distribution of the medals and certificates to the students, and to listen to the inaugural address by Mr. W. W. Stoddart. Mr. W. A. Henstone, a Bell Scholar, took the highest prize of the year, the Pereira medal; Mr. Frederick Jansen Hanbury took the Farberium prize, with a most splendid collection of more than 700 specimens, perfectly mounted, and embracing nearly all of the flora of the British Islands, including many rare and valuable plants; Mr. Robert Higgins Davies, another Bell Scholar, took the Silver Council Medal for Chemistry and Pharmacy, Mr. Edward Rammel, a third Bell Scholar, following close upon him, and taking the Bronze Medal. The same award was made in the Botany and Materia Medica class, but in Practical Chemistry Mr. W. A. Henstone, the Pereira medallist, took first place, Mr. R. H. Davies following him. The Bell Scholarships were awarded to Mr. Sidney Plowman, of Boston, and Mr. Edward Lawrence Leaver, of Oxford Street, London. The prize of books was taken by Mr. G. C. Druce, of Northampton. The president (Mr. Haselden) distributed the medals and certificates, and the successful competitors were greeted with hearty applause.

Mr. Stoddart's address is reported in full on another page. The lecturer earnestly advocated the claims of science, both on account of the pleasure of its pursuit, and for its solid practical value. Everybody who took any part in the proceedings was cheered enthusiastically, the most popular being the lecturer, the Pereira medallist, and Mr. Frederick Hanbury.

A heavy failure for a retail druggist is reported from Birmingham, namely, that of Mr. W. Sumner. The debts amount to £16,871, and assets estimated at £3,181. At a meeting of creditors held on the 7th inst., a resolution was passed to accept 3s. 6d. in the pound, to be paid in twelve months. The debtor has been trying to retrieve his position since January last, during which period he has managed to increase his deficiency by some £3,500.

Professor Edward Parrish, of Philadelphia, U.S., the well-known author of the treatise on Practical Pharmacy, died on September 9th, at Fort Sill, Indian Territory, at the age of 50. His loss has occasioned universal regret among the pharmacists of America.

Mr. Thomas Ellis Hooker, pharmaceutical chemist, died at Sidcup on the 28th ult., aged 48. Mr. Hooker was for many years in business at Wellington in Somersetshire, but was best known in the West of England as a very able lecturer on electrical subjects. Latterly Mr. Hooker has been manager of the dispensary department at Allen and Hanbury, Plough-court.

Mr. Richard Sturton, pharmaceutical chemist, of Peterborough, died on the 29th ult., aged 39. This gentleman was a very accomplished pharmacist, and his early death is deeply mourned by all who knew him.

The death is also announced of Mr. Smith, Chemist, High Street, Sunderland. He had been in bad health for several years, and was ordered to take a sea voyage. He died (of consumption) shortly after leaving the coast of England.

A conference of chemists and druggists was held at the rooms of the National Chamber of Trade, on the 10th inst., to take into consideration the Civil Service co-operative competition. Mr. A. F. Haselden was in the chair, and, among a large company, were present Mr. C. H. Savory, Mr. Henry Deane, Mr. M. Carteighe, Mr. T. Greenish, Mr. Bourdass, Mr. L. Newbery, and the principals of many other West-end and City firms. The conference was, to some extent, of a private character, therefore we are not able to report the resolutions in full; but we may say that a spirited unanimity prevailed, and firm determination was manifested to combat this "shabby" combination on the part of the civil servants, both by influencing parliament, by legal procedure, and by employing such means as were available to affect wholesale and manufacturing firms. It was also agreed that chemists throughout the country would do well to organize with other tradesmen in order to make the vast power which the trading classes ought to exercise more felt in our legislature. And it was also decided that the National Chamber of Trade offered a valuable nucleus for that organization.

The chemists and druggists of Liverpool will soon have a new "commercial" rival, in the shape of the "Liverpool Civil Service and Public Supply Association," which will be conducted on much the same principles as the London Civil Service Supply Association. The new society in Liverpool intends to deal in the general drug trade, including patent medicines, proprietary goods, powders, essences, oils, tinctures, syrups, cosmetics, perfumery, tooth powder, &c. According to the prospectus we have received, the conductors of the association are arranging for the purchase of a portion of Compton House.

At a meeting of the chemists and druggists of Brighton, held at the Town Hall, September 13th, 1872, it was unanimously determined to dissolve the old association of the chemists and druggists, and to form another, to be entitled "The Brighton Association of Pharmacy." That it consist of twelve members (six principals and six assistants) to constitute a committee. That the following, on the motion of Mr. Barton, and seconded by Mr. Higham, do constitute such committee:—Messrs. Brew, Colby jun., Cornish, Etiles, Savage and Schweitzer, as principals; and Messrs. G. Watkin jun., Higham, Matthews, Pick, Purvis, and W. H. Smith, be the assistants. That Mr. W. D. Savage be president *pro tem.*, and Mr. Matthews be secretary. The object of the association is to establish monthly meetings for lectures or the reading of pharmaceutical papers.

A handsome drinking fountain, costing about £600, has been erected near the Bow station of the North London Railway, as a testimonial to Messrs. Bryant and May, for their energy in combating the Chancellor of the Exchequer in the match-tax. There is no doubt that if that proposal had been carried into effect, it would have occasioned severe and wide-spread distress in the east of London. In recognition of the services rendered by Messrs. Bryant and May on that occasion, this testimonial had been subscribed for. It was opened on the 5th instant by the Lord Mayor.

The chemists and druggists of Camden Town and Kentish Town have agreed to close their shops at 8 o'clock (Saturdays at 10 p.m.), and on Sundays entirely. This arrangement is to come into operation on October 21st.





## COLONIAL BUILDINGS, CANNON-ST., LONDON, E.C.

Advertisements, Remittances, Subscriptions, Orders for Copies, and all communications must be addressed to "THE PUBLISHER" of THE CHEMIST AND DRUGGIST

Cheques and Post-office Orders to be made payable to *Edward Halse*, and crossed *Martin & Co.*

No one is authorised to collect money without production of the Proprietors' lithographed form of receipt.

Receipts not forwarded for sums under 10s., unless the remittance be accompanied by a stamped envelope.

### SCALE OF CHARGES FOR ADVERTISEMENTS.

One Page £5; Half Page £2 15s.; Quarter Page £1 12s. Special Rates for Wrapper, and the pages preceding and following literary matter. The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Thirteen insertions. Seven Lines and under, 4s. 6d.; every additional Line, 6d.

Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

All Advertisements intended for insertion in the current Month must be sent to THE PUBLISHER of THE CHEMIST AND DRUGGIST on or before the 12th, except Employers and Assistants' Advertisements, which can be received up to 10 a.m. on the morning previous to publication.

Subscribers are requested to observe that, for the future, the receipt of THE CHEMIST AND DRUGGIST in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

An edition of THE CHEMIST AND DRUGGIST is printed on thinner paper expressly for foreign circulation. The Journal is mailed direct from the Office to its subscribers in every part of the world; but subscriptions may be paid and advertisements arranged with any of the following

### FOREIGN AGENTS.

ADELAIDE.....	Messrs. Faulding and Co.
BOSTON, U.S. ....	Office of "Boston Journal of Chemistry."
CALCUTTA.....	Bathgate and Co.
DUNEDIN .....	Kemptborne, Prosser, and Co.
MELBOURNE.....	Folton, Grimwade, and Co.
MONTREAL .....	Evans, Mercer, and Co.
NEW YORK .....	Mr. P. M. Sherwood, 85, Liberty-street.
PARIS .....	P. D. Orvis, 3, Rue Scribe.
PHILADELPHIA ..	W. M. Dickson, 619, Walnut-street.
SAN FRANCISCO ..	Messrs. Redington, Hostetter, and Co.

Terms for Advertisements over the Leaders may be obtained on application to the Publisher.

## SITUATIONS ABROAD.

GENTLEMEN WHO ARE COMMISSIONED TO ENGAGE Chemists' Assistants for Foreign Countries are respectfully requested to avail themselves of the Photographic Album kept at the office of the "CHEMIST AND DRUGGIST" exclusively for such. Terms on application.

## DOMESTIC FILTRATION.

"WITH regard to the Silicated Carbon Filters, I have made many experiments upon them, and have been astonished at the energy and rapidity of their action. I passed through a small Filter of this make some of the worst description of water supplied by the London Water Companies, and found it, after filtration, to have become as pure as the very best London water. My experiments show that the Filter exercises a decomposing action—a chemical action—on the Organic Impurities in Drinking Water. I have no doubt that Water, which is dangerous from the Organic Matter contained in it, becomes safe on passing through the Silicated Carbon Filter. A point of some importance, shown by my experiments, is that a Second Filtration still further improves the quality of Drinking Water. After being in use for a considerable period, Filters lose their power and require renovation. I have found that the passage of a little Hot Water through the Silicated Carbon Filter, and afterwards blowing a little air through it, restores its power."

J. ALFRED WANKLYN, M.R.C.S., London,  
Formerly Professor of Chemistry in the London Institution;  
Joint Author of a Book on Water Analysis, and of the  
Ammonia Process.

## WARREN'S "SWEET" ESSENCE OF RENNET.

From "THE LANCET," May 13th, 1871.

"This preparation differs from the ordinary liquid and so-called *essences* in its freedom from acid and salt, which after a time affect injuriously the coagulating power of the rennet. Tested with milk, we found it to answer admirably."

From "THE MEDICAL PRESS AND CIRCULAR," July 12th, 1871.

"RENNET IN GASTRITIS.—Having had occasion recently to order rennet whey in the case of a child recovering from gastritis, we took the opportunity of testing, side by side with other similar preparations, Warren's Sweet Essence of Rennet. The observation of its action on milk has satisfied us that it is, of the preparations with which we are acquainted, not only the pleasantest, but the most effective, agent for the coagulation of the caseine. It acts, even under unfavourable circumstances of temperature, rapidly and certainly—a quality not enjoyed by all other solutions of the sort, and seldom possessed by the rennet bag itself."

1s. Bottles packed in one dozen cases, 9s. each, wholesale. Show Cards and Circulars supplied. Discount allowed according to Quantity taken. Orders supplied by most of the Leading Houses.

## PURE LINI FARINA.—A NOVELTY.

DRUGGISTS are respectfully invited to make trial of our real LINI FARINA, a pure Flour of Linseed, prepared free from Husk, by a new process, by

ROBERT LOCKHART, JUN., & Co.

WAVERLEY OIL MILLS, EDINBURGH, AND 45, HOPE STREET, GLASGOW.

Samples and prices on application.

## JOHN CARGILL BROUGH.

JOHN CARGILL BROUGH was born in Pontypool, Monmouthshire, on February 11, 1834. His father, Mr. Barnabas Brough, was then a brewer and wine merchant in that town, and also part owner of a coal mine in the neighbourhood. Under the name of Barnard de Burgh, he wrote one or two dramatic sketches, one of which, "I won't Go; or, How to Keep a Place," was acted in London by Tyrone Power. He was also the author of several copies of verses, mostly humorous.

In 1840 Mr. Barnabas Brough was one of the principal witnesses for the Crown in the trial of John Frost, the chief instigator of the Chartist movement in Monmouthshire and South Wales. In consequence of this he became exceedingly unpopular among the pitmen and others who had been concerned in the outbreak. So much so, that they by degrees deserted the inns which he supplied, and in a short time his once prosperous business declined, and he was ultimately obliged to leave the town where he had for some years held a good position.

In 1843 he took his family to Manchester, where he had some friends, and commenced business as an auctioneer and accountant.

While in Manchester John Cargill Brough, the subject of our memoir, attended the Manchester Grammar School with his younger brother, Lionel. When he was eleven years old he suffered from a very serious attack of rheumatic fever, the effects of which materially affected his health during the whole of his after life. When partially recovered he was sent under the care of an uncle to Buxton, in Derbyshire, where the virtues of the mineral springs restored him to health. He then joined his family in London, whither they had removed during his sojourn in Buxton.

In 1845 Mr. Barnabas Brough made the acquaintance of the late Herbert Ingram, who engaged him as accountant to the *Illustrated London News*, an appointment in which John became his father's assistant, and remained



for some years in his office. During that time all his spare hours were spent in study and in efforts to improve his mind. The love of science developed itself at a very early age, and many a time was it a matter of grave consideration, how many pennies could be saved out of his never too plentiful dinner-money, towards buying some much-desired book, materials or scientific experiments, or admission to a lecture.

In 1852 he obtained a situation as clerk in the audit office of the South Western Railway, and while in that position, became Secretary and Librarian of the Literary and Scientific Institution, established by the South Western Railway for its *employés*. Here he gave several lectures, and here also he made the acquaintance of the amiable lady who afterwards became his wife.

In 1854, he had the misfortune to lose his father, and at once had to lend his slender aid towards the maintenance of a younger brother and sisters. In company with some friends whose pursuits were congenial, he established a private Mutual Instruction Society, the members of which used to meet at each others' houses. He himself read several excellent papers on scientific subjects, chiefly on Chemistry.

He remained at the audit office until about a year after his marriage, which took place in 1857, he, being then twenty-three years old. His inclination to literary work caused him to throw up his situation, that he might follow literature as a profession, writing articles on various subjects for the *National Magazine*, the *Welcome Guest*, the *Train*, and other magazines and periodicals. As a consequence of his literary ability, he became one of the original members of the Savage Club, and had consequently a large circle of literary acquaintances. He numbered among his personal friends some of the principal essayists, playwrights, and novelists of the day.

He assisted his gifted brother Robert in much of his magazine work (notably in the editorial work of the *Atlas* newspaper, and the *Welcome Guest*), and under the shadow of his wing, made his first flights in the world of journalism. In 1859, he brought out the "Fairy Tales of Science," a book highly esteemed, and one eminently calculated to attract youthful students into the magic circle of natural philosophy.

In 1860, he became editor of the *CHEMIST AND DRUGGIST*, and in that capacity raised the literary character of the journal to that degree of eminence which it has since maintained.

As Editor of a class journal he was most successful, possessing that enviable power of pouring oil upon troubled waters, while at the same time fearlessly giving his voice on the side of right and justice, which is specially needed in such a situation.

Out of the correspondence to which the editorial work of the *CHEMIST AND DRUGGIST* gave rise, grew the foundation of some of the firmest and truest friendships which blessed the latter years of his life.

In 1864 he edited an edition of "Cooley's Cyclopædia of Practical Receipts," and about the same time was elected a fellow of the Chemical Society.

He for many years entertained the idea of establishing a high class scientific journal, which should be a medium of intercommunication for chemists, physicists, and scientific workers generally in all parts of the world, and formed many plans in reference to such a publication. Pressure of work and want of funds, however, long prevented this favorite scheme from being carried out; but at length some friendly capitalists to whom he submitted his plans agreed to assist him, and in April, 1867, was published the first number of the *Laboratory*, a Weekly Record of Scientific

Research, which, on account of its excellence, immediately received the approbation and adhesion of most of the scientific men of the day. The particular section of the public to which it appealed was not sufficiently numerous to make the profits cover the large outlay necessary for its publication, and it proved a commercial failure. It gained him, however, many valuable friends, and added not a little to his reputation as a scientific man.

The non-success of this publication was a severe disappointment, and the disappointment fell upon a heart already wrung with sorrow, for a few months before the termination of the *Laboratory* he had lost his wife, to whom he was tenderly attached.

This blow was one of a series, for in 1860 he had lost his brother Robert, for whom he entertained a deep affection and unbounded admiration. One month after the death of his wife, a widowed sister died, leaving two orphan children to his care; and in 1870 his eldest brother, William, the well-known dramatist, also died. These heavy domestic trials told terribly upon his affectionate and sensitive heart, and probably predisposed him for the terrible malady to which he afterwards fell a victim.

During the Exeter meeting of the British Association in 1869, in conjunction with two friends he published *Exeter Change*, a humorous brochure, full of good-natured satire, which was warmly received and highly appreciated by the savans at Exeter.

When *Nature* was first published, he was its sub-editor, but after a few months careful work was forced by an attack of illness to give up the post.

During all this time he retained the editorship of the *CHEMIST AND DRUGGIST*, continuing to take the same deep interest in its success, until in 1870 he was appointed Librarian and Superintendent of the London Institution, a position for which he was eminently fitted both on account of his literary and scientific acquirements, and of his natural courtesy and geniality of disposition. He became exceedingly popular with the frequenters of the institution, doing much valuable work there, particularly with regard to lectures. True to his journalistic tendencies he instituted the *Journal of the London Institution*, which he himself edited. During the winter of 1871-2, he gave a course of Holiday Lectures on the Philosophy of Magic, adapted to a juvenile auditory, and completely won the hearts of the youthful visitors to Finsbury Circus.

He suffered for some time more or less from the effects of heart disease, and during the last year was subject to severe attacks of illness in consequence, but his courage and genial brightness never failed, and, even when suffering most severely, he had kind words and sympathy for all who came in contact with him.

Something has already been said in these columns of the charm of his character, the beauty of his disposition, and the strong personal influence he possessed. We content ourselves with giving these few facts of his life. Few and meagre as they are, we feel that they will convey their own lesson. His life was that of a patient, conscientious worker, who, through honesty and steadiness of purpose, won the confidence and esteem of all who knew him.

In the summer of last year Mr. Brough went with his family to Esher for a time, and returned much improved in health. In July of this year he again visited the same neighbourhood, hoping for a like result; but being no longer able to struggle against the complicated ills of his body, he finally sank there on the 7th of September, and was buried at Norwood on the 12th of the same month.

At his grave were assembled many well-known representatives of literature, science, art, pharmacy and com-



merce. The Institution with which he was connected was worthily represented, as well by some of the most distinguished members of the Board of Management, as by some of the humblest of its servants. Indeed nothing could better serve to show the wide extent of his sympathies than the varied elements which met, united by the common brotherhood of sorrow, around that solemn spot.

### ON THE BANKRUPTCY ACT.

AFTER all the trouble that was taken some two or three years ago to construct a perfect Bankruptcy Act, and to arrange the complicated machinery necessary to work it, we can scarcely discover any appreciable improvement in the relations between debtors and creditors. And this result, we believe, does not arise from any intrinsic imperfection in the Act itself. It rests with creditors themselves, whether they will make the Act really useful or not. We have previously suggested a method whereby the provisions of the law might be carried out, with considerable advantage to creditors, and the occurrence of a large failure in Birmingham, in our own trade, the details of which we fully record on another page, gives us an opportunity to advocate our plan with the advantageous assistance of an illustration, recent enough to be vivid. The debtor had been carrying on business in a perfectly reckless manner for a long time past, his books were in a disgraceful condition, he had swamped some £13,000 of other people's money, besides what he may have had of his own to commence with; his solicitor acknowledged that no account of this loss could be rendered, except that the debtor had been "above his business," and it was asserted by all that he had had an excellent opportunity of making a fortune. We are utterly uninterested in the matter pecuniarily, and entirely unacquainted with the debtor, but we have seldom if ever met with a case which was so thoroughly suited for Bankruptcy treatment, and which was so apathetically dealt with by the creditors. For the course of folly and recklessness which consummated in the failure, what was the return which the debtor received from those he had injured? Why practically he was presented with the money he had squandered, and set going again with no guarantee for future good conduct. This, be it observed, was not done out of any ebullition of generous feeling, but simply from a conviction that any other course was hopeless and impracticable. We believe that with proper management it was not so by any means, and that the creditors might have secured in time the 10s. in the pound which the Bankruptcy Act is intended to provide.

We should like to see some thoroughly competent and reliable men in our trade, as well as in most others, who would offer themselves as professional trustees for estates in Bankruptcy. Suppose one had been available in this instance; some one to whom the management of a good business might have been confidently entrusted. Conceive such a one armed with the power which the Bankruptcy Act confers on a trustee, which is very considerable, and imagine the debtor compelled to work under him until 10s. in the pound had been paid. This would have been to the latter at once a punishment by no means undeserved, and a valuable discipline by no means undesirable, and there is every chance that, with skill and energy, the hoped-for result might have been accomplished in three or four years. Let those creditors who accepted 3s. 6d. in the pound, believing it to be the best bargain they could make, answer whether, if they could have got a competent man to manage the affair for them, they would not have believed in the possibility of getting 10s. in the pound out of the estate? Every time a failure is compromised in the slipshod

manner which characterised the settlement of Sumner's estate, a direct and serious injury is done to the moral as well as to the material welfare of the commercial community; while equally, every strict investigation and thorough prosecution of the Bankruptcy provisions would do a correspondingly tonic service to our trading classes.

The one need that we see is the want of some professional trustees. Business valuers and business agents are plentiful enough. There is a grand opportunity for them to launch out in this very promising line. If they fail to supply the want we strongly recommend some of our smart and ambitious young men to fit themselves to take the position.

### THE POWER OF INFLUENCE.

(A Second Study from the Greek.)

By JOSEPH INCE.

I HAVE to thank the courageous courtesy of the Editor for the insertion of these abstract disquisitions. Fully conscious as I am of the feebleness of the exposition, I know the importance of the results involved.

It has been pointed out to me that I mystified some readers by alluding to the Phedon, not the Phædo. It was at the Sorbonne that I became acquainted with Plato's masterpiece, and there the former name is alone accepted. I want hardworking chemists and druggists to read the following sentences, for they concern *them* infinitely more than mere scholars and people at their ease: they seem barren and repulsive, but they may change the current of a life, and lead it out from its surroundings, however commonplace, into action at once the noblest and the most practical.

These Greek speculations are the death of the superficial, for they are the life of thought. Happy shall I be, can I induce one apprentice to translate them into personal experience. Suppose I risk the surprise of our Universities and tell what was the Phædo.

Phædo was the disciple and friend of Socrates. "In his youth he was taken by pirates, but was redeemed by Socrates, who had a profound esteem for his character, and recognized in him an exalted genius. After the death of his master he returned to his native land, and there founded a school of philosophy." (Bouillet.) Plato, in a moment of inspiration, resolved to give the world the doctrine of the Immortality of the Soul as held by Socrates, and in order to secure a picturesque vividness of style, he constructs a dialogue, Phædo being the chief spokesman: hence the name with which the book has been associated for ever. Socrates was condemned to death; waiting for the sad event, several of his friends assemble in the cell. There was truth and fiction in the idea. Plato himself observes in a celebrated sentence that he was not present: "Plato I believe was ill." The scene is laid in Argolis, and one Echestratus thus addresses Phædo:—

E. "Pray, Phædo, were you yourself with Socrates on the day when he drank the poison in his prison, or did you hear the story from some other person?"

Ph. "I was there myself, Echestratus."

E. "And what did that great man say in his last moments, and what was the manner of his death?"

This is the plot, worked out it need not be said, in a style of marvellous beauty. The scene is laid in Argolis, and as they talk together, a dramatic narrative is furnished of the end of the great philosopher who discourses about various things, chiefly the immortality of the soul. With that, though the grand theme, we have nothing to do just now,



nor hero; but we have to do with two thoughts that spring from the main subject. The consideration of force—the eternal storing up of all physical and intellectual power whenever once exerted—this we have tried to describe already; also the wonderful power of influence residing in all things created, animate or inanimate—that power which we all possess, and the exercise of which we cannot help—that power by which a *dead* impassive object may suggest living thoughts and direct living actions, that force by which the sight of a lyre suspended on a wall may bring back the recollection of a friend, or by which a passing occurrence may determine our future destiny. All this we have, delineated by the master hand in Phædo, in a way hopeless to imitate and difficult to reproduce; but surely I am not wrong in thinking that these two thoughts accepted may alter the current of our daily lives, may stimulate our faculties to the highest, and make us students, it may chance, of Natural Science or of Pharmacy, in a sense and in a manner, and with a purpose that no other possible mental training can inspire.

How the heart bleeds for him who accepts a catalogue of facts, indexed well or not for reference, as knowledge, and who wonders that afterwards neither sham honours nor a false position yield the anticipated pleasure, or condone for the thistles from which had vainly been expected grapes. Let us try if we cannot enter a more excellent way, which may guide us safely into the intellectual life.

Is there in existence one who has never felt within himself impulses deciding modes of thought and action for which he could render no possible explanation, which have stirred him with equal mystery and power? has the angel never unbidden troubled the waters? This is high philosophical fact; bring it down and apply it to prosaic use. Men and things act on us in an inexplicable manner; we in turn act on men and things unconsciously perhaps, but in a way startling in the realisation.

If even a dead mirror can store up impressions that last throughout the ages, if a dead lyre can hold familiar converse with our souls—knowing as we do instinctively that power of influence which all living things possess—does not his Greek teaching widen our views of things, give us a larger earth, and put more space into our world?

What a glorious insight it gives us into what we term natural science; how it explains the fascination such pursuits *must* have; how it clothes every branch of learning or acquirement with a vitality of its own. Here we might wander at our own sweet will for hours. I leave the matter with you. It is for us to multiply and direct, and create the sources from which this power may spring; add but one single additional source, by personal character, by the written letter which remains, by didactic instruction, by facilities for the growth of influence, and you have lived our day.

This power, subtle as an ether, almighty and omnipotent, is our gift in trust for others. Let us, as teachers, make it potent, and the difficulty of our task is over; and for this reason, the broader we sow our points of influence towards the good the sooner shall we attain our end; the wider the surface on which we act, the easier is our task. Do, in mercy, let our children have as wide and liberal an education as circumstances will allow. Take them boldly beyond the range of pharmacy and the range of their ultimate studies. Give them an insight into, and implant in them a love for, all that is and has been excellent in deed, in work, in moral and intellectual action, in the literature in which such excellence has been enshrined, and there will grow within them a passion of imitation and emulation better than all set rules and skilfully devised

training can effect. Naturally and unprompted, we shall have a race of pharmacists worthy of the name, and the vexed question of education will at last be solved. Blessed are ye that sow beside all waters.

### IMPORTANT NOTICE.

THE Registrar of the Pharmaceutical Society has politely favoured us with the following list of names which will shortly be erased from the register, unless the persons referred to communicate with the Registrar, at 17, Bloomsbury-square. Registered letters have been sent to each of these persons and have not been replied to, but it is thought possible that by the publication of the list in the "CHEMIST AND DRUGGIST," some may be notified who would not otherwise be made aware of their danger.

#### \*Pharmaceutical Chemists.

Abel, William	Brownhills, Staffordshire.
Acton, Aubrey	122, St. Peter's-st. Anderston, Glasgow, N.E.
Acton, Samuel Frederick	Compton-road, Wolverhampton
Adams, William John	Cheltenham
Aldridge, William	Sewardstone, Essex
Alexander, William	Glasgow, N.E.
Allard, George	Liverpool
Allen, Benjamin	Birmingham
Allen, Frederick	High-street, Hereford
Allen, William	68, Spring-street, Landport, Hants
Allingham, George Samuel	London
Allman, John Dowling	London
Allwork, Frederick	Redmill, Surrey
Anderson, Charles William	Southampton
*Anderson, David Kennedy	Rothesay, N.B.
Anderson, James	7, New-road, Newcastle-on-Tyne
Andrews, Henry Manning	3, Acre-lane, West Brixton, Surrey
Angus, Henry	Gateshead-on-Tyne
Annette, Alfred George	Cheltenham
Appleby, Thomas	84, Meanwood-road, Leeds
Airell, William Whittaker	33, King-street, Snowhill, London, E.C.
Aris, Augustus	3, Mount-street, New-road, London, E.
Armstrong, Benjamin	Plymouth Iron Works, near Merthyr, Glamorgan
Ashby, William	Nottingham
Ashton, Thomas Gray	London
Aspinall, George James	Brunswick-square, Westminster-road
Aston, Thomas	Kirkdale, Lancashire
Attwell, Arthur	Newcastle-on-Tyne
Aymer, David	London
Ayre, Henry Mills	Fore-street, Hexam, Northumberland
	Coventry
Bailey, Henry	Boxley Heath
Baker, Frederick	London
Baker, Henry Rutler	34, Hambrook-street, Southsea, Hants.
Baker, John Thomas	London
Baker, Oswald	London
Baker, Thomas	Blandford, Dorset
Baker, William Ritchie	Hounslow, Middlesex
Ballard, Phillis	39, St. Paul's-road, London, N.
Bamford, Henry Kelway	Exeter
Bamford, James	218, Mill-street, Liverpool
*Banks, Alfred Joseph H.	Bedford
Banks, Frederick	London
Bardley, William	216, St. Paul's-road, London, N.
*Barnister, Edward	London
Barker, Edwin	34, Marybone, Liverpool
*Barker, William	Stockton-on-Tees
*Barker, William Baylis	Liverpool
Barlow, Walter Frederick	St. John-street-road, London, E.C.
Barlow, George Edward	Liverpool
Barnitt, John	Leeds
Barrow, Edward	3, Essex-ter., Church-rd., Leyton, Essex
Barrow, Eliza	Levenshulme, Lancashire
Barrow, James Horsfield	Pendleton, Lancashire
*Barry, John Adcock	Grantham
*Bartlett, James	Bath
Bartlett, William Hugh	1, Linton-villas, Linton-st., New No road, London, N.
*Bartley, Thomas Nicholas	Cheltenham
Bartliff, George	Teddington, Middlesex
Baxter, Robert	3, St. James'-square, Edinburgh
Bayly, Henry	16, Croyley-street, Hoxton, London, N.
*Beaumont, Richard James	Cheltenham
Beard, Thomas William	London
Beer, James Henry Elias	London
Bell, John	Brighton
Bemrose, William	London
Bennet, John Dryborough	26, St. James'-square, Edinburgh, N.E.
Bennott, John	272, City-road, London, E.C.
Benson, Alfred	Chasetown, Staffordshire
Berry, James	Liverpool
Best, James	Loicester
Beveridge, James Martin	Woolwich, Kent
Bew, John	Edinburgh, N.B.



Bibby, Henry .....	Ulverston-rd., Dalton-in-Furness, Lancs.	*Clifford, John Rehd. Shepherd .....	London
*Bilney, Joseph Thomas .....	London	Coates, Joseph .....	Newcastle-on-Tyne
Bilsborrow, John France .....	Lea-green, Sutton, Lancashire	Cochran, Robert .....	Forfar, N.B.
Binstead, Arthur .....	273, Camberwell New-road, Surrey	Cole, George William .....	High-street, Chepstow, Monmouth
Bisson, Philip Nicholas .....	Hawkhurst	Collins, William Alfred .....	63, Collier-st., Pentonville-road, London, N.
Black, James Hall .....	Glasgow, N.B.	Compton, Samuel .....	24, Hatcham Park-road, New Cross, Surrey
Blackburn, Henry Carter .....	Whetstone, Middlesex	Constable, Edwin .....	Hunter's Vale, Birmingham
Blair, John .....	Edinburgh, N.B.	*Cook, Thomas .....	Glasgow, N.B.
Blanchflower, John Coleman .....	Canterbury	*Cook, William .....	Grautham
Blenkin, Peter Smith .....	Wilberforce Terrace, Anlaby-road, Hull	Cooke, William Marcus .....	Kidderminster
Blyth, Uton .....	London	Cookson, George .....	11-al-street, Dudley
Boor, Frederick .....	London	Cooper, William .....	Neville-street, Ulverstone, Lancashire
Boor, William .....	Birmingham	*Copeland, John .....	Woolwich, Kent
*Booth, Alfred .....	Warrington	*Copney, William .....	London
Borman, John Henrie .....	5, De Laune-st., Kennington Park, Surrey	Corbett, William .....	Edinburgh, N.B.
Boulter, George .....	Haymarket, London, S.W.	Corbett, William .....	Worcester
Boulton, Joe Seals .....	Brentwood, Essex	Corner, Thomas Brodrick .....	London
*Boulton, John George .....	Edinburgh, N.B.	Corps, Charles .....	London
Bourne, William Kemsey .....	Coventry	Corrin, William .....	London
Bowe, Oswald Routh .....	25, Cleveaud-street, Middlesborough-ou- Tees, Yorks.	Cort, John .....	Portland-place, Doddington-street, Re- gent-road, Salford, Lancashire
Bowen, James .....	Deptford	*Cotton, Charles N. ....	Plymouth
Bower, Albert Hunter .....	41, Warrior-road, Camberwell, Surrey	Coulding, John James .....	19, King-street, Salford, Lancashire
Bower, William .....	Broadstones, Bradford, Yorks.	Cox, Henry James Wilson .....	Brighton
Bowles, Edward Henry .....	Fisherton Anger, Salishury	Cox, Oliver .....	London
Bowles, William James .....	London	*Cracknel, Benjamin .....	Halesworth
Boyle, Alfred .....	14, Cardigan-road, Bow, Middlesex	Cragie, James .....	57, High-street, Tillicoultry, Clackman- nashire
Bracegirdle, John .....	24, Half-street, Manchester	Crawford, George .....	Edinburgh, N.B.
Braddock, James .....	Manchester	Crisp, Owen William .....	1, Ormond Row, Smith-street, Chelsea, Middlesex
Bradley, John .....	Leeds	Crocker, George .....	Weston-super-Mare
Brandreth, Elizabeth .....	96, Moor-lane, Preston, Lancs.	Croskell, James .....	London
Brereton, Matthew Bayfield .....	Putney, Surrey	Cross, Thomas .....	Batley, Yorkshire
Brereton, Thomas Arthur .....	New Swindon, Wilts.	*Cuddeford, John .....	Edinburgh, N.B.
*Brewer, John Wm. Northway T. ....	Okehampton, Devon	Curry, George John Symonds .....	St. Leonard's-on-sea
Briggs, George .....	21, High-street, Bath		
Brigstocke, James .....	London	Dain, Leopold .....	40, Dano-street, Nottingham
Brinsmead, Thomas James .....	London	Dakin, John .....	Chester
Briseoe, John .....	16, Grafton-street, Leeds	Dale, Alfred .....	20, Bittern-street, Liverpool
Britten, John .....	Bromley, Kent	Dale, George .....	York
*Brooklesby, David Hyde .....	London	Dalton, Charles .....	83, Lee-hank-road, Birmingham
Bromley, Edward .....	London	Dalziel, Hugh .....	New Ferry, Cheshire
Brooker, John Bedford .....	89, Lake-road, Landport, Hants.	*Davidson, James .....	Newcastle-on-Tyne
Brookes, James .....	105, West Graham-street, Glasgow, N.B.	Davies, Hopkin Jones .....	Ferry-side, Carmarthenshire
*Brown, Allen McLaren .....	Brighton	Davies, John Richards .....	Worcester
*Brown, Archibald .....	Glasgow, N.B.	Davies, Rees .....	Colechester, Essex
Brown, John .....	London	Davies, Richard .....	99, Morton-street, Manchester
Brown, John .....	Newcastle-on-Tyne	Davies, Richard Goodman .....	72, Great Howard-street, Liverpool
Brown, Thomas Scrafton .....	134, Beaufort-st., Toxteth Park, Liverpool	Davies, Samuel .....	Rowley-hill, Staffordshire
Browne, James .....	Rugby, Warwickshire	Davis, John Poole .....	20, Fore-street, Taunton
Browne, Thomas Llewellyn .....	Chester	Davis, Richard .....	184, Old Kent-road, Surrey
Broxholm, Charles .....	4, Heath-street, Barking, Essex	Davis, Thomas .....	7, Bruce-road, West Bromley, Middlesex
Bryau, John Nicholas .....	552, Kingsland-road, London, E.	Dawson, Gantley .....	Stockport, Cheshire
Bryant, John .....	33, Horseferry-road, Westminster, Mid- dlesex	Dawson, Robert .....	Manchester
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Bullock, Alfred Hugh .....	Manchester	Deane, Alfred .....	Brighton
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Burks, Benjamin .....	95, Mare-street, Hackney, Middlesex	Dewhurst, William .....	135, Attercliffe-road, Sheffield
Burleigh, William .....	1, Tredegar-road, Bow, Middlesex	Dibble, John William .....	Bristol
Burnan, William R. ....	London	Dickins, Benjamin .....	Stratford-on-Avon
Burnett, Joseph R. ....	4, Moreton-st., Strangeways, Manchester	Dickins, Joseph .....	Leeds
Burrows, Robert .....	94, Gibson-street, Hyde-road, Manchester	Dixon, Joseph .....	37, Orient-street, Everton, Liverpool
Burt, Frederick George .....	Clifton-place, Plymouth	Dixon, Robert .....	51, Bold-street, Northwood, near Hanley, Staffordshire
Butler, Alfred Buttel .....	Maidstone	Dods, John Thomas .....	Porto-hello, N.B.
*Butler, John Symes .....	Frome, Somerset	Donald, John Hardy .....	Edinburgh, N.B.
Byerlee, John .....	92, Opie-street, Liverpool	Dooks, Richard Boulby .....	33, Castle Gate, Huddersfield
		Doughty, Richard .....	Bushey Heath, Herts
		Douglas, James Pallisor .....	Charles-st., Goswell-road, London, E.C.
		Douglas, Joseph Stringor .....	69, Tower-street, Westminster Bridge- road, Surrey
Callaway, James .....	London	*D'Oyle, John .....	Chelsea, Middlesex
*Calvert, John .....	Durban	Draper, James Henry .....	Trowbridge, Wilts
Cameron, Alexander Forbes .....	27, Clyde-street, Edinburgh, N.B.	Draper, Richard .....	Newark-on-Trent
Cameron, William Alexander .....	Egremont, Cheshire	Draper, Thomas .....	48, McAslam-street, Glasgow, N.B.
Campbell, Alfred .....	Hounslow, Middlesex	Drury, Morris Hayward .....	26, Oxford-street, London, W.
Campbell, William .....	Glasgow, N.B.	Dry, William Henry, jun. ....	36, High-street, Poplar, Middlesex
Cannell, George Arthur .....	127, Hinde-street, Scotswood-road, New- castle-on Tyne	*Duchess, Richard .....	Cambridge
Canning, Phillip Stoneham .....	Coventry	Duck, William Masterman .....	Stokesley, Yorks.
Canning, William .....	101, Borough-road, Southwark, Surrey	Duncalf, William Picken .....	Kluver, Staffordshire
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Carter, Thomas Wright .....	St. Alban's	Dyer, Alfred Knyaston .....	London
Cartwright, John Horncastle .....	Leeds	Dyer, William George .....	3, Union-road, Clapham, Surrey
Castell, Thomas Barford .....	4, Theresa-terrace, Wood-green, Middlesex	Dymond, John .....	5, South-square, Gray's Inn, London, W.C.
Cave, Alfred .....	London		
Challener, Theophilus .....	Harbury, near Leamington, Warwickshire	Easson, Robert .....	Glasgow, N.B.
Challice, Swann .....	London	Eastes, Charles .....	Gravesend, Kent
Chalmers, David .....	Manchester	Edward, William Wales .....	Aberdeen, N.B.
Chambers, George .....	22, Great Garden-street, Leeds	Edwards, John Morgan .....	67, Union-street, Southwark, Surrey
Chapman, James .....	4, Lower Bland-street, Great Dover-street, Southwark, Surrey	Edwards, William James .....	107, Hampstead-road, London, N.W.
Charlesworth, Wm. George .....	Miles Platting, Manchester	Edwards, Joseph .....	Liverpool
Cherrington, Barcholl .....	Taunton	Elkington, Jacob .....	21, Broadway, Deptford, Kent
Chirm, John .....	2, Providence-place, George-street, Lo- zells, Birmingham	Elledge, John Wesley .....	Southampton
Christmas, Samuel George .....	73, Borough-road, Southwark, Surrey	Ellis, Charles Samuel .....	Fordham, Cambs.
Clapham, Edward .....	Leeds	Embleton, Bradloy .....	235, Strand, London, W.C.
Clark, Andrew .....	Edinburgh, N.B.	Emerson, Edward Gerard .....	
Clark, Shadrach .....	3, Crofton-ter., Hammersmith, Middlesex	Wetherell .....	6, Holland-road, Notting-hill, Middlesex
Clarke, William .....	Newcastle-on-Tyne	Evans, Henry .....	Lloyd-street, Whitby, Yorkshire
Clarke, Joseph James .....	Keswick, Cumberland	Evans, Henry William .....	156, Walton-road, Kirkdale, Liverpool
*Clarke, Thomas .....	Oxford	Evans, John .....	156, Walton-road, Kirkdale, Liverpool
Clarke, Thomas Watson .....	London	Evans, Roger Jones .....	30, Priory-street, Everton, Liverpool
Clarke, William .....	3, Duke-street, Bury, Lancashire	Evans, William .....	3, Lodge-lane, Liverpool
Clarke, William Lang .....	London	Evoleigh, Francis William .....	24, Suffolk-road, Dalston, London, E.
*Clarkson, James .....	Hull		
Clayton, William .....	London		
Cliffe, William .....	Mushroom-street, New Town, Leeds		



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Fairbairn, George .....	15, Windermere-st., Everton, Liverpool	Hands, George William .....	Smethwick, Staffordshire
Farrer, John Downing .....	Great Yarmouth	Harden, Charles .....	Bristol
Faulconbridge, Alfred .....	155, Dale-street, Liverpool	Hardwich, James .....	Exeter
Fawcett, Christopher .....	Linthorpe, Middlesbrough-on-Tees	Harker, James .....	68, Corporation-street, Halifax, Yorks.
Featherston, John Peter .....	London	*Harnett, Alfred .....	Kingston
Feltwell, John .....	London	Harrington, Philip John .....	Clifton
Fenner, Edwin .....	Brighton	Harris, Edmund .....	78, Borough-road, Southwark, Surrey
Fidell, Albert James .....	Oxford	Harris, Robert .....	Northampton
Folds, Cotnam .....	Birmingham	Harris, William Edmund .....	261, Kingsland-road, London, E.
Flmer, George Alfred .....	1, Bromley-road, Nott'ng-hill, Middlesex	Harrison, Frederick .....	Vaughton-street, South, Birmingham
Fish, Lawrence .....	Fielden-street, Blackburn, Lancashire	Harrison, John .....	100, Duke-street, Liverpool
Fisher, Glengarry .....	Edinburgh, N.B.	Harrison, John Copo .....	90, Bristol-street, Birmingham
Fisher, William Henry .....	Liverpool	Harrison, John Mather .....	33, Mount Pleasant, Liverpool
Fisher, William Raymond .....	Loytonstone-road, Stratford, Essex	Harrison, William .....	168, Hinde-street, Newcastle-on-Tyne
Fitzgerald, Henry .....	Bath	Hart, George Francis .....	2, Tarvit-street, Edinburgh, N.B.
Fanagan, William James .....	7, Rugg-street, Limehouse, Middlesex	Hartley, Charles Henry .....	23, Burley-road, Leeds
Faun, Joseph .....	Rotherhithe, Surrey	Hawkes, James .....	Birmingham
Fletcher, George .....	Sneinton, Notts	Hawksworth, John Lewis .....	Nafferton, Yorks.
Floyd, John .....	Liverpool	Hayles, William Wheeler .....	109, Commercial-road, Southampton
Forbes, Alexander .....	Lochee, Forfarshire	Haylock, Frederick .....	177, Green-street, Bethnal Green-road, London, E.
Ford, William Henry .....	53, Kensington-park-road, London, W.	Hayward, Henry Thomas .....	215, Vauxhall-road, Liverpool
Foster, Henry .....	Manchester	Heath, Thomas .....	3, Victoria-terrace, Addiscombe-road, Croydon, Surrey
Foster, Henry James .....	London	Heathcoat, Thomas .....	79, St. James'-road, Holloway, Middlesex
Foster, James .....	61, Scotch-street, Carlisle	Heathorn, Alfred .....	Reading
Howe, Robert Main .....	Worcester	*Heathorn, William .....	Maidsome
Howler, Charles Henry .....	London	Hebb, Thomas .....	Craven-terrace, Sale, Cheshire
Hox, Robert George .....	15, Cirencester-place, Portland-road, Middlesex	Henderson, Mary Jane .....	51, Bridge-street, Glasgow, N.B.
oy, Edwin .....	1, Lion-street, Norwich	Heudry, Alexander Massie .....	Bridge House, Woodside, Aberdeenshire
Francis, Robert Dolbey .....	Bishop's Castle, Salop	*Hepple, Henry .....	Bideford
Francis, Thomas Brook Turner .....	1, St. George's-square, Worcester	*Herring, George .....	Doncaster
Franklyn, Thomas .....	London	Herron, William Kilburn .....	2, Garden-street, Wakefield
Fraser, Donald Halliday .....	Easton-street, High Wycombe, Bucks	Hick, Henry .....	7, Frederick-place, Caledonian-road, London, N.
Freeman, William .....	46, Hospital-street, Birmingham	Higman, Richard .....	89, Union-road, Southwark, Surrey
Frith, John Bruff .....	Devizes	Hill, Alexander Scott .....	103, Hospital-street, Glasgow, N.B.
Fryar, Robert .....	Ipswich	*Hill, Charles William .....	Hull
Guller, Ira Thomas .....	Edinburgh, N.B.	Hill, Francis .....	Leeds
Gurley, John .....	Reeces	Hill, Samuel .....	Norman-road, Greenwich, Kent
Gurze, Leader .....	13, Boston-terrace, Bradmore Park, Hammersmith, Middlesex	*Hill, Thomas .....	Selhurst-road, South Norwood, Surrey
Gyfe, John Lawrence .....	47, Hughes-street, West Derby-road, Liverpool	Hinksman, John .....	Edinburgh, N.B.
Gambier, Gerald Garth Colliton .....	Brighton	Hire, George Frederick .....	56, Manor-road, Bermondsy, Surrey
Gamble, George Pope .....	Bowmont Lodge, Queen's-road, Richmond, Surrey	Hobson, Joshua .....	39, Lloyd-street, Kirkstall-road, Leeds
Garry, George .....	174, Sherlock-street, Birmingham	Hoekenhull, Thomas .....	Park-road, Congleton, Cheshire
Gavin, John .....	34, Shamrock-street, Glasgow, N.B.	Hoffmann, Adolphus .....	55, New Bridge-street, Claremont-terrace, Manchester
Gee, Isaac .....	Leith, N.B.	Hogarth, Thomas .....	206, Walton-road, Liverpool
Gerald, Gaston .....	4, Robert-st., Hampstead-rd., London, N.W	Hogg, George .....	18, Narrowgate street, Alnwick, North-umberland
Gerrain, Thomas .....	27, Paradise-street, Liverpool	Hogg, Joseph Fawcett .....	Middlesbrough-on-Tees
Gibb, Adam .....	6, Lower Bridge-street, Chester	Holloway, Charles .....	29, Long-street, Birmingham
Gibbings, Henry William .....	18, Rosebank Cottages, Edinburgh, N.B.	*Holmes, Jasper Clement .....	Southampton
Gibbs, Nathaniel B. .....	15, Garlic-hill, London, E.C.	Holmes, John .....	Batley, Yorks.
Gibbs, Paul Taylor .....	London	Holmes, William C. .....	London
Gibson, Charles Alfred .....	London	Holt, Thomas .....	22, Queen's-road, Nottingham
Gibson, John .....	14, Penny-st., Leeds-rd., Bradford, Yorks.	Holtham, Charles .....	High-street, Chepstow, Mon.
Gibson, Robert Hart .....	Strickland-place, Kendal, Westmoreland	*Hood, William .....	Edinburgh, N.B.
Gill, Thomas .....	42, St. Andrew-square, Edinburgh, N.B.	Hope, John, jun. ....	4, Grove-lane, Camberwell, Surrey
Giliatt, William .....	5, Nile-street, Leeds	Hopkins, James .....	103, All Saints'-street, Hastings
Gilman, Rufus .....	96, Albany-street, London, N.W.	Hora, William Travers .....	11, Merriek-square, Southwark, Surrey
Glaister, Chambers .....	Sherston Magna, Wilts	Hornaby, Thomas .....	6, Frederick-place, Mile End, Middlesex
Glover, John .....	King-street, Wigton, Cumberland	*Hornsey, William .....	Edinburgh, N.B.
Godshy, Francis .....	Queen-street, Earlstown, Lancs.	Horton, Thomas .....	Green-lane, Stonyeroft, Liverpool
Gollop, Robert .....	53, Park-hill-road, Liverpool	Horton, Walter Charles .....	71, East-street, Brighton
Goddale, John Walleth .....	Tetbury, Gloucestershire	Howard, John .....	Swaffham, Norfolk
Goddison, Thomas .....	Leicester	Howard, Thomas .....	4, Deacon-street, Liverpool
Goddard, John Jonathan .....	Chesterfield	Howarth, William .....	168, Stretford-road, Hulme, Manchester
Goddwin, Felix .....	Birmingham	Howson, Thomas B. ....	Eynsham, Oxon
Gordon, Richard .....	Yeovil, Somerset	Hoyle, George Radcliffe .....	Walksend, Houghton, Lancs.
Gover, Robert Mundy .....	44, Adelaide-street, Liverpool	Hoyle, John William .....	Hawkhurst
Gowing, James John W. ....	Spalding	Hudson, Charles .....	New Malton, Yorks.
Gowland, William .....	Great Yarmouth	Hudson, Walter .....	5, Hope-street, Leeds
Goy, Robert .....	48, High-street, Sheffield	Hudson, William .....	2, Newbold-road, Asylum-road, Peckham, Surrey
Grant, John .....	Hull	Huggins, William Henry .....	26, North Portland-street, Glasgow, N.B.
Grant, John Smith .....	34, Eglinton-street, Glasgow, N.B.	Hughes, Joshua .....	Crickhowell, Brecknockshire
Gray, Alfred .....	Edinburgh, N.B.	Hughes, Richard David .....	Henley-on-Thames
Gray, Frederick .....	172, White Horse-st., Stepney, Middlesex	Hughes, Thomas .....	Denbigh
Gray, John Frederick .....	London	Humphreys, Henry .....	Pimlico, London, S.W.
Gray, Thomas Scott .....	Shrewsbury	Hunter, Archibald .....	2, Park-pl., Regent's-pk., London, N.W.
Green, Conrad Samuel .....	Melton-Mowbray	Hunter, Charles Miller .....	21, Great Ormond-street, Jarow-on-Tyne
Green, Joseph .....	Stratford-on-Avon	*Hunter, David .....	Edinburgh, N.B.
Green, Thomas .....	York	Huntaman, Charles .....	41, Upper-street, Phillips-road, Sheffield
Green, William Gunthorpe .....	Leamington, Warwickshire	Hutchinson, George Baseott ..	Brighton
Greaves, John Williams .....	Northgate-street, Ipswich	Inger, George .....	3, Thornhill-eres., Barnsbury, London, N.
Greaves, Robert Taylor .....	13, Mableton-place, Burton-crescent, London, W.C.	Ingham, Grace .....	57 and 59, Limekiln-lane, Liverpool
Gregory, John Thomas .....	13, Mableton-place, Burton-crescent, London, W.C.	*Inglis, Hugh .....	Glasgow, N.B.
Grey, Daniel .....	London	Inglis, William .....	Edinburgh, N.B.
Gribble, George William .....	154, Sauchiehall-street, Glasgow, N.B.	Innes, George William Rundle ..	Penzance
Giffiths, Griffith .....	41, Park-street, Upper-street, Islington, London, N.	Ismay, John George Vipond ..	Bristol
Giffiths, Henry William .....	London, N.	Jacklin, Timothy John .....	193, East-street, Walworth, Surrey
Gimdale, James .....	Merthyr-Tydvil	Jackson, Charles .....	52, Kentish Town-road, London, N.W.
Ginsden, Frederick .....	Peu-y-Grig, Carnarvonshire	Jackson, Charles Frederick .....	Clifton
Ginsdon, Victor .....	Chelsea, Middlesex	Jackson, Edward .....	43, Lower Rosoman-street, London, E.C.
Guy, George Henry .....	Hanley, Staffordshire	Jackson, John .....	8, Princess-street, Barbican, London, E.C.
	London	Jackson, John West .....	41, Ironmonger-row, London, E.C.
	Bristol	Jackson, Leonard .....	Manchester
		Jackson, Richard Gill .....	Market-place, Melbourne, Derbyshire
		Jackson, Warwick .....	Colchester
		James, Henry .....	Ross, Herefordshire
		James, Henry .....	Sheffield
		James, William .....	Northampton
		Jeffery, John Augustus .....	Clifton
		Jeffery, Edwin Baseott .....	Tunbridge Wells
Gill, Henry .....	Holme Cottage, Kirkstall, Leeds		
Gill, John .....	Mitchell Dean		
Gill, John William .....	Birmingham		
Gimilton, Archibald .....	7, India-place, Stockbridge-place, Edinburgh, N.B.		



- Jenkins, Howell ..... 15, Nicholl-square, London, E.C.  
 Jenson, William ..... 38, De Beauvoir-terrace, London, N.  
 Johnson, Benjamin ..... Cinder-hill, Staffordshire  
 Johnson, Edward ..... 3, Sidney-place, Sherbourne-road, Birmingham  
 Johnson, Edward William ..... 16 Christie-road, South Hackney, Middlesex  
 \*Johnson, Joseph ..... London  
 Johnson, Michael ..... Prescott, Lancs.  
 Johnson, Richard ..... 216, Park-road, Liverpool  
 Johnson, Robert Dodds ..... 3, Fowler-street, South Shields  
 \*Johnson, William ..... London  
 Johnson, William ..... London  
 \*Johnson, William G. .... Jersey  
 Johnstone, William Boyd ..... Garston, Lancs.  
 Jolliffe, John ..... 204, Hackney-road, London, E.  
 Jones, Edward James ..... Horton-crescent, Rugby  
 Jones, Frank ..... 8, Kerford-street, Liverpool  
 Jones, Hugh Lloyd ..... 14, Mountjoy-street, Everton, Liverpool  
 Jones, John Whitley ..... Regent-street, Llangollen, Denbighshire  
 Jones, Robert ..... High-street, Maidehead  
 Jones, Robert Morris ..... 43, Stonewall-street, Everton, Liverpool  
 \*Jones, Robert William ..... High-street, Poplar, Middlesex  
 \*Jones, Rowland Pritchard ..... Llanrwst, Denbighshire  
 Jones, Thomas ..... 13, Newcastle-st., Strand, London, W.C.  
 Jones, Thomas Philip ..... Haverfordwest  
 Jones, William Henry ..... 163, Derby-road, Bootle, near Liverpool  
 Jones, William Robert ..... 12, Parliament-street, Liverpool  
 Jopling, Mark ..... 48, Crossgate, Durham  
 Joyce, John Barrington ..... Coleford, Gloucestershire  
 Keates, John Francis ..... Great Hampton-street, Birmingham  
 Keeling, Edmund ..... 10, Holloway Head, Birmingham  
 Kelly, Thomas ..... 14, Wellington-place, Northampton  
 Kenyon, Septimus ..... 34, Meek-street, Maidstone  
 King, Alfred ..... 108, Blackman street, Southwark, Surrey  
 King, Frances ..... Bridgegate, Irvine, Ayrshire  
 King, James ..... Bristol  
 King, James ..... 6, Store-street, London, W.C.  
 \*King, Thomas ..... Wendover  
 Kirby, Samuel Amos ..... Gosport, Hants  
 Kitchen, William Pointon ..... Edge-lane, West-derby, Liverpool  
 Knibb, Thomas ..... 43, Mount-street, Birmingham  
 Kupitz, Ferdinand Kilian ..... 35, Duke-street, Aldgate, London, E.C.  
 \*Laasy, Henry ..... Edinburgh, N.B.  
 Lambert, Thomas ..... Whittington Moor, Derbyshire  
 Lambton, John George ..... Sunderland  
 Lambton, Robert ..... 22, Mount Stewart-square, Cardiff  
 Laming, Welhery ..... Market Rasen  
 Lamplough, Henry Thomas ..... Knightsbridge, London, S.W.  
 Laeham, John ..... Culver House, Shanklin, Isle of Wight  
 Latter, Leonard ..... 73, Camden-road, London, N.W.  
 Lawrance, John Wilcox ..... 64, Rotherfield-st., Islington, London, N.  
 \*Lawrence, William Pierpoint ..... Macclesfield  
 \*Lawson, William ..... Bury, Lancs.  
 Lea, Leonard ..... 4, Upper Falkner-street, Gloucester  
 Leake, Edward Leach ..... 90, Rockingham-st., Union-road, Southwark, Surrey  
 Lean, William ..... 25, John-street, Pentonville, London, N.  
 Lee, John Edwin ..... 188, Kennington-road, Surrey  
 \*Lee, John William ..... Liverpool  
 Lee, Richard William ..... Castle Forgeate, Shrewsbury  
 Leighton, Thomas ..... Edinburgh, N.B.  
 \*Lenton, William Henry ..... 141, Hemingford-road, London, N.  
 \*Lever, William ..... London  
 Levie, Alexander Mair ..... Edinburgh, N.B.  
 Lewis, Charles William ..... London  
 Lewis, Nathaniel James ..... Market-street, Haverfordwest  
 Lewis, Richard ..... Towyn, Merionethshire  
 Lilwall, Thomas Edward ..... Hookley-hill, Birmingham  
 \*Lingwood, James Grace ..... Great Yarmouth  
 Lister, Thomas William ..... Liverpool  
 Livingstone, John ..... 4, St. Cuthbert-street, Edinburgh, N.B.  
 Locke, Charles George ..... 107, Great Jackson-street, Hyde-road, West Gorton, Lancashire  
 Lockertie, James ..... 27, West Clyde-street, Helensburgh, N.B.  
 Locks, Richard P. B. .... London  
 \*Logan, Richard ..... Edinburgh, N.B.  
 \*Long, George ..... 15, Gladstone-st., Battersea-park, Surrey  
 Longhurst, James Sidney ..... London  
 Lovatt, John Hammond ..... Willenhall, Staffordshire  
 \*Love, John ..... Sandgate, Kent  
 Lowe, Aehibald ..... 15, Warburton-street, Liverpool  
 Lowe, John ..... 185, Church-st., Bethnal-green, London, E.  
 Luas, Fredrick Charles ..... 62, Charlotte-ter., Blackfriars-rd., Surrey  
 Lynch, Edwin ..... 15, Primrose-hill, Breckino-street, Hulme, Manchester  
 Lyon, James ..... Ipswich  
 McCree, William ..... Whitby  
 McDough, Michael ..... 27, St. Andrew-street, Glasgow, N.B.  
 Macdonald, Robert ..... 1, Houldsworth-street, Glasgow, N.B.  
 Macdonnell, Daniel ..... 27, Hall Craig-street, Airdrie, N.B.  
 Macdonnell, James Randall Wm. .... 14, Bank-street, Aelford, Kent  
 McDougall, Patrick ..... 35, Middleton-street, St. John-street-road, London, E.C.  
 Macewan, Andrew ..... 40, McIntosh-street, Glasgow, N.B.  
 Macewan, William Morrison ..... 172, New Bond-street, London, W.C.  
 Macfarland, David Lindsay ..... Leslie, Fifeshire  
 McGillivray, George ..... 49, Cowgate, Dundee, N.B.  
 McGregor, Donald ..... 77, Shamrock-street, Glasgow, N.B.  
 McKane, George Oliphant ..... Gatohead-on-Tyne  
 Mackay, Allan George ..... Edinburgh, N.B.  
 Mackay, Kenneth ..... Edinburgh, N.B.  
 MacLaughlin, James ..... 77, South Wellington, Glasgow, N.B.  
 \*McLean, George ..... 188, High-street, Poplar, Middlesex  
 McLeavy, James J. .... 78, Gloucester-street, Glasgow, N.B.  
 McMillan, James Laker ..... Glasgow, N.B.  
 Maccaughton, Alexander ..... Edinburgh, N.B.  
 Macneil, Laehlen ..... 100, Torriano-avenue, London, N.W.  
 McOwan, John Townsend ..... London  
 \*MacRae, James Ross ..... Edinburgh, N.B.  
 MaeVea, Anthony ..... Glasgow, N.B.  
 McWilliams, William Kirk ..... Doncaster  
 Madgwick, Rufus ..... Stratford-on-Avon  
 Manson, John ..... 15, South College-street, Edinburgh, N.B.  
 Margotts, George Bryan ..... 213, Ladywood-lane, Birmingham  
 Mark, James ..... 232, Whitechapel, Figa-street, London, E.  
 \*Marks, Benjamin ..... Plymouth  
 Marriott, Frederiek T. .... Rugby  
 Marsh, Edward ..... 36, Park-street, St. Helen's, Lancs.  
 Marshall, Ell ..... London  
 \*Marshall, John ..... Stepney, Middlesex  
 Martin, Alfred Joseph ..... Bay Cottage, Chobham-road, Stratford, Essex  
 Martin, James ..... Plymouth  
 Martin, James ..... Southampton  
 Masterman, George ..... London  
 Mather, William ..... Lumb-rhead Green, Pemberton, Lancs.  
 Matthews, John James ..... 15, Salem place, Exeter  
 Mattison, William ..... Saville-street, North Shields  
 Maunsley, William ..... Preston, Lancs.  
 Meager, Richard George ..... 35, Bull-street, Birmingham  
 Meikle, Robert Reed Greig ..... Castle Eden, Durham  
 Melhuish, John ..... 78, High-street, Hastings  
 Menerey, Charles ..... 1, West Ferry-road, Poplar, Middlesex  
 Mercer, Arthur Bosworth ..... 152, Spencer-street, Liverpool  
 Mereer, George Thomas ..... Longton, Staffordshire  
 Merrick, Charles James ..... Manchester  
 Middleton, John ..... 52, Charlotte-ter., Blackfriars-rd., Surrey  
 Miles, Frederiek George ..... Buttermarket, Thame, Oxon  
 Miles, Frederiek John ..... Newcastle-under-Lyne  
 \*Miller, Thomas ..... Dunfermline, N.B.  
 Miller, Cockburn Scott ..... 36, Guthrie Port, Arbroath, N.B.  
 Miller, John Ernest ..... Raudall-street, Highfield, Sheffield  
 Miller, Thomas Lanseer ..... Blanford, Dorset  
 Millor, William John Jephtha ..... Saffron Walden, Essex  
 Millington, Edward ..... 32, Marine Parade, Brighton  
 Milns, John Coupland Scott ..... Alford, Lincolnshire  
 Milton, Emily ..... Beulah-road, Walthamstow, Essex  
 Mitchell, Charles Edward ..... Tunbridge Wells  
 Mitchell, John ..... 28, Emma-street, Hendon, Sunderland  
 Mitchell, Richard Hall ..... 3, Middleton-terrace, Bridge-road, Batterssea, Surrey  
 Mitchell, Thomas ..... Doncaster  
 Moir, James Charles ..... 146, Scotland-road, Liverpool  
 Monger, Hamilton Stacey ..... Stroud, Gloucestershire  
 Monkhouse, Edward Hewer ..... 18, Gower-place, Euston sq., London, W.C.  
 Moore, Charles Edward ..... High-st., Aston, New Town, Birmingham  
 Moore, Richard Henry ..... 37, Stepey Causeway, London, E.  
 Moore, Thomas ..... Back Adelphi-st., Kirkstall-rd., Leeds  
 Moorhous, Stephen ..... Stoke-on-Trent  
 Morgan, Charles ..... Stamford, Lincolnshire  
 Morgan, William ..... 42, Castle-street East, London, W.  
 Morgans, John Bowen ..... Milford  
 Morris, Alfred ..... 45, Warden-road, Kentish Town, London, N.W.  
 Morris, Charles ..... 145, Sydney-street, Bolton, Lancashire  
 Morrison, William ..... 25, Musc-la, Cowcaddens, Glasgow, N.B.  
 Mort, Alfred Manks ..... 1, Alexandra Place, St. Vincent-street, Birmingham  
 Mortihoy, John ..... Stafford  
 Morton, James Thomas ..... 190, St. Vincent-street, Birmingham  
 Mose, George ..... 62, Gee-street, Goswell-rd, London, E.C.  
 Mose, William Amplett ..... Worcester  
 Moulton, James Ebenezer ..... Northampton  
 Moyey, William ..... 34, Adelphi-street, Preston, Lancashire  
 Murch, Edward ..... 29, Higher Union-street, Torquay  
 Mussel, George ..... 3, Milner-terrace, Moss Side, Manchester  
 Musto, Alfred George ..... Churchingford, Devon  
 Mutlow, Henry ..... 23, Tintern-st., Walton-rd., Liverpool  
 \*Mylius, Charles ..... London  
 Nest, Henry ..... 133, Maldon-road, Haverstock-hill, London, N.W.  
 Newington, Henry Plaisted ..... 12, Nelson-terrace, Morning-lane, Hoxton, Middlesex  
 Newman, Joshua Booth ..... Wolverhampton  
 Newman, Samuel Charles ..... 2, Somerset-square, Cathay, Bristol  
 Neweon, Thomas ..... 15, College-street, Belvedere-road, Lambeth, Surrey  
 Nicholas, William ..... 47, Bedford-street, Strand, London, W.C.  
 Nicholas, William Richard ..... 1, Amherst road East, Hackney, Middlesex  
 Nicholas, Samuel ..... Derwent-terrace, Matlock, Bath  
 Nicol, William ..... 42, Howe-street, Edinburgh, N.B.  
 Nock, Thomas Francis ..... Newcastle-under-Lyne  
 Nooten, Ernest Van ..... Edinburgh, N.B.  
 Norman, James Remington ..... 43, Copperas-hill, Liverpool  
 Normington, Charles Andrew ..... Chad-street, New Town, Leeds  
 Nutter, John ..... Westminster, Middlesex  
 Onkes, George ..... 63, Great Russell-street, W.C.  
 Offer, Charles Cadbury ..... 6, Springfield-place, Cuslaud-road, South Hackney, Middlesex  
 Ogden, Henry ..... 32, Hanover-street, Leeds  
 \*Oliver, John Hamer ..... Shrewsbury  
 \*Oliver, William ..... Coggehall, Essex  
 Ombler, Henry William ..... Upper Mary-street, Balsall Heath, Worcester  
 Onions, Henry ..... Penkridge, Staffordshire  
 \*Orton, John William ..... Brighton  
 Ostlor, Charles ..... Galashiels, N.B.



Overhury, Frederick .....	87, Barbury-street, Birmingham	Routledge, Henry .....	London
Owen, Charles Richard .....	198, High Holborn, London, W.C.	*Row, Frederick .....	Yarmouth
Paine, Frederick .....	50, High-street, Islington, London, N.	*Rowell, Charles Frederick .....	Uppingham, Rutland
Paletthorpe, Samuel .....	Carrington-street Bridge, Nottingham	Rowley, John Broadfield .....	91, Walworth-road, Surrey
Palmer, John Malu .....	4, Arthur-terrace, Forest-road, Dalston, London, E.	Rowse, George .....	1, Queeu-street, Barnsley
Pape, James .....	1, Clarendon-road, Notting-hill, Middlesex	Rubbra, Edmund .....	256, King-street West, Hammersmith, Middlesex
Paris, Thomas .....	Salisbury	Sadgrove, Arthur Augustus .....	2, Queen's-road, Norland-square, Notting-hill, Middlesex
Parker, John .....	51, St. James's-street, Burnley, Lanes.	Sanders, Richard .....	15, Mulberry-street, Liverpool
Parker, Robert .....	Botesdale, Suffolk	*Sang, John Grant .....	Grantham
Parke, Thomas .....	Knutsford	Sansom, Henry Perry .....	Willenhall, Staffordshire
*Parrott, John Smyth .....	Birmingham	Saunders, Henry Britton .....	28, Albany-street, London, N.W.
Patman, George .....	Berkhamstead	Say, Edmond Hugh .....	St. Leonard's-on-Sea
Pattison, Matthew Lee .....	36, Dove-street, Liverpool	Seaman, Charles .....	59, Rochdale-road, Manchester
*Payne, John .....	Leighton	*Scott, George .....	Birmingham
Peach, William .....	Sutton, Lincolnshire	Scott, Henry Thomas .....	Blandford, Dorset
Peacock, Joseph .....	North Shields	Scott, James .....	Edinburgh, N.B.
Peacock, William Spencer .....	93, Lower Craven-place, Highgate-road, Middlesex	Scott, Joseph Robinson .....	Sheffield
Peede, Arthur .....	20, Argyle-square, London, W.C.	Seager, Walter .....	118, Great Dover-st., Newington, Surrey
Pemberton, Thomas .....	380, Park-road, Soho, Birmingham	Seath, George .....	Chesterfield
Penney, David .....	Edinburgh, N.B.	Seymour, George .....	Oldbury
Penton, Charles William .....	Maidstone	Seymour, William White Collins .....	Stockton-on-Tees
*Pepper, Adolphus .....	London	*Sparland, William Henry .....	Barnet, Herts
Peters, John .....	Birmingham	Sharp, William Henry .....	Victoria-road, Seacombe, Cheshire
Peters, John .....	Edinburgh, N.B.	Sheldrake, George .....	High-street, Heckmondwike, Yorkshire
Phillips, John Philip .....	Oxford	Shelmerdine, Henry .....	New Brighton
Picciotto, Samuel .....	London	*Shepherd, Thomas .....	Wakefield
Pigon, Francis .....	London	Sherratt, James .....	41, Wilt-lane, Pendleton, Lancashire
Pittman, Edward J. F. .....	Birmingham	Shields, Thomas .....	22, Lamb-conduit-street, London, W.C.
Pitt, Charles .....	63, Broad-quay, Bristol	Shirley, William .....	Prescot-road, Old Swan, Liverpool
Platt, William .....	216, Breck-road, Everton, Liverpool	Shirran, James M. .....	Royal Infirmary, Glasgow, N.B.
*Pollard, William .....	Leeds	Sihthorp, Stephen Jas. Keuneth .....	Sauehieh-street, Glasgow, N.B.
Poolley, Charles Edwin .....	13, Chapel-street, Sheffield	Simons, John .....	53, Elizabeth street, Liverpool
Porter, Augustus F. .....	Piccadilly, London, W.	Simpson, Edwin .....	63, Collier-st., King's-cross, London, N.
*Potbury, Benjamin Charles .....	Box's-buildings, Hick-street, Highgate, Birmingham	Simpson, George .....	Hull
Power, Edward James .....	4, Burlington-place, Bath	Sims, Francis M. B. .....	Colchester
*Powis, William .....	16, Broadgate, Lincoln	Sindair, George .....	40, Jamaica-street, Edinburgh, N.B.
*Price, Benjamin .....	2, Church-street, Wrexham	*Skrimshire, Thomas .....	London
*Price, Edwin .....	Ystrad, Glamorganshire	Skryme, Nathaniel Rowland .....	Pontyctryn, Glamorganshire
*Price, John .....	175, Richmond-row, Liverpool	Smith, Alexander .....	6, Suffolk-street, Glasgow, N.B.
*Price, Thomas .....	Pembroke Dock	Smith, Alfred .....	London
*Price, William .....	Salisbury	Smith, Charles .....	Great Coggeshall, Essex
*Riddin, John .....	Odd-rode, Astbury	Smith, David .....	Oxford
*Riestman, William .....	174, Lever-st., Bath-street, London, E.C.	Smith, Henry .....	Ipswich
*Richard, Urban .....	London	Smith, John .....	58, Bold-street, Liverpool
Rector, William Boston .....	London	*Smith, John .....	Portsmouth
Prowse, Charles .....	Bristol	*Smith, Joseph .....	Birmingham
Rugh, Woodford Henry .....	13, Duke-st., Westminster-road, Surrey	Smith, Joseph Wheeler .....	Birmingham
urves, Samuel .....	Edinburgh, N.B.	Smith, Robert Scarborough .....	17, Bounary-road, London, N.W.
amm, Thomas Edward .....	Market-square, Hitchin, Herts.	Smith, Sidney .....	Nuneaton, Warwickshire
amsey, Emma .....	Great Grimshy, Lincolnshire	Smith, Thomas .....	34, Armstrong-street, Scotswood-road, Newcastle-on-Tyne
atney, Alexander .....	12, Murray-gate, Dundee	Smith, William .....	1, Lockwood-road, Bermondsey, Surrey
awlinson, Ralph .....	London	Smith, William .....	2, Orchard rd, Leith-wk., Edinburgh, N.B.
aworth, Harrison Walker .....	Bristol	*Smyth, George Frederick .....	43, Portland-rd., Notting-hill, Middlesex
ayner, Hessey .....	Terminus-road, Eastbourne	Snook, David Mead .....	18, High-street, Exeter
ead, Charles .....	4, Napier-road, Kensington, Middlesex	Snowdon, George Wingham .....	1, Oakfield-ter., St. James's-rd., Croydon
ead, Frederick .....	Birmingham	Somerville, Archibald .....	Moffat, Dumfriesshire
ead, Henry .....	New Ferry, Cheshire	Spence, John Robinson .....	Edinburgh, N.B.
ead, Robert .....	Devizes	Spence, Thomas Baird .....	2, High School Yards, Edinburgh, N.B.
edford, Edward A. .....	Edinburgh, N.B.	Spicer, Charles .....	3, Milton Court-road, New Cross, Kent
edford, Joseph .....	Windsor	Spindelow, Richard William .....	135, Chatsworth-street, Liverpool
ees, George Louis .....	127, Gt. Collage-street, London, N.W.	Spurin, Victor Albert .....	7, Charles-st., Knightsbridge, London, S.W.
eeve, George .....	26, Alma-ter., Hammersmith, Middlesex	Spurin, Rosecoe Charles .....	St. Blazey, Cornwall
elly, Maurice Shelton .....	Wood-street, Barnet, Herts.	Staines, John Francis .....	48, High-street, Strood, Kent
emnington, Arthur .....	London	Stanley, Alfred George .....	198, Queen's rd., Bayswater, London, W.
enwick, Thomas Kerr .....	47, South Bridge, Edinburgh, N.B.	Stanley, Frederick Albert .....	Winchester
ichards, James .....	London	Stebbing, Walter .....	Letton, Herefordshire
ichards, Thomas Lewis .....	Chester	Steed, Robert Owen .....	54, Union-street, Southwark, Surrey
ichards, William Bevan .....	46, Market-street, Manchester	Stenhouse, Robert .....	Alloa, N.B.
ichardson, Edward .....	Alexandria, Dumbartonshire	Stephens, Josiah .....	Tregaron, Cardigan-hire
ichardson, Frederick Austin .....	1, Clyde-terrace, Park-lane, Tottenham, Middlesex	Stevens, John Ashley .....	187, Parrock-street, Gravesend
ichardson, James .....	London	Steward, Augustus .....	68, Fulham road, London, S.W.
ichardson, Robert .....	Ipswich	Steward, James .....	Edinburgh, N.B.
iddall, John .....	93, North Hanover-st., Edinburgh, N.B.	Steward, John Alfred .....	Reading
iddling, Witham .....	London	Stewart, William Finnie .....	29, Clarence-street, Edinburgh, N.B.
ider, Frederick .....	London	Stickler, Francis Milos .....	13, Hereford-road, Bayswater, London, W.
idge, Jesse .....	233, Oldham-road, Manchester	Strickland, George William .....	Lancaster
iley, Susan .....	1, Abbey-street, Nunheaton	Stuart, William Knox .....	4, Radnor-terrace, Dumbarton-road, Glasgow, N.B.
ingrose, Blanshard .....	Leeds	Stulbs, Arthur Houghton .....	28, Stanley street, Bedminster, Bristol
oberton, James .....	Higher Broughton, Manchester	Sturton, Thomas .....	625, Old Kent-road, Surrey
oberts, George Wootton .....	204, Hackney-road, London, E.	*Sutcliffe, Joseph .....	London
oberts, Hugh .....	41, Paradise-street, Liverpool	Surtees, William .....	Barton-on-Humber
oberts, Owen .....	Pwllheli, Carnarvonshire	Sutcliffe, John .....	Halford-street, Snethwick, Staffordshire
obertson, Andrew Graham .....	2, Kerr-street, Edinburgh, N.B.	Sutcliffe, Enoch .....	Bacup, Lanes.
obertson, George .....	London	Sutherland, James .....	Glasgow, N.B.
obinson, Charles .....	16, Rose-hill, Liverpool	Sutton, Charles .....	8, Whitmore-road, Hoxton, London, N.
obinson, John .....	40, Darley-street, Bradford, Yorkshire	Sutton, Walter Robert .....	76, Ratcliffe-street, Everton, Liverpool
obson, Joshua Hutchinson .....	Norwich	*Sutton, William .....	Swaffham, Norfolk
odford, Percy .....	34, Warwick-st., Douglas-st., New Cross	Swain, John .....	Tunstall, Staffordshire
odway, Edwin Augustus .....	62, Kirk-st., Calton, Glasgow, N.B.	Swindell, James Turner .....	16, Coleman-street, London, E.C.
ogers, William James .....	10, Bartholomew-street, Exeter	Swmes, Henry Tanner .....	London
ogerson, Jonathan Lowndes .....	77, Clarendon-street, Hulme, Manchester	*Symons, John Crane .....	Dudloy, Worcestershire
oney, James .....	Leigh, Lancashire	Tanner, Benjamin .....	Liverpool
oper, John .....	Nailsea, Somerset	Taplin, George .....	Bath
ose, Charles .....	2, West-street, Upper St. Martin's-lane, London, W.C.	Taylor, Joseph Walter .....	1, Wellington-terrace, Penzance
ose, Charles .....	Upper Lewisham-rd., New Cross, Kent	*Taylor, Charles .....	Birmingham
oss, Robert Campbell .....	136, Hadden-street, Woodside, near Aberdeen, N.B.	Taylor, Frederick Cottle .....	London
	138, Hadden-street, Woodside, near Aberdeen, N.B.	Taylor, George .....	366, Regent road, Salford, Lanes.
		Taylor, George Edwin .....	Dublin
		*Taylor, Herbert Dawson .....	Manchester
		Taylor, John Charles .....	55, Manor-place, Walworth, Surrey



Taylor, John James Salmon... London  
 Taylor, Richard... 81, Hill-street, Pockham, Surrey  
 Taylor, Sam... Facit, near Rochdale, Lancs.  
 Taylor, Stewart... Edinburgh, N.B.  
 Tebbs, Richard... Leicester  
 Teeling, Philip Walter George... 18, Goldsmith-street, Liverpool  
 Tempest, Arthur... 17, Stocks-hill, Holbeck, near Leeds  
 \*Thomas, James John... Croydon, Surrey  
 Thomas, Llewellyn... Poutypool  
 Thomas, Rees Henry... Broad-street, Ross, Herefordshire  
 Thompson, John... Orford-road, Walthamstow  
 Thompson, Richard... London  
 \*Thompson, William Austin... Carlisle  
 Thomson, George William... 9, Lennox-road, Holloway, Middlesex  
 Thomson, John... Edinburgh, N.B.  
 \*Thurston, Frederick... Ipswich  
 \*Tims, Thomas Lamb... Leamington, Warwickshire  
 Todd, Thomas... Edinburgh, N.B.  
 Tomsett, George Thomas... Brighton  
 Towle, Francis Seemark... 7, Carrington-street, Nottingham  
 Townsend, George Frederick... 23, Cleveland-road, Islington, London, N.  
 Townsend, Joseph Henry... 82, Graham-road, Dalston, London, E.  
 Townsend, William Potter... 82, Graham-road, Dalston, London, E.  
 Troughton, James... 115, Rish-ton-street, Everton, Liverpool  
 Troncker, John Henry... London  
 \*Tucker, Henry... Henley-on-Thames  
 Tune, George Martin... 53, Caroline-place, Hull  
 \*Turnbull, James... Jodburgh, N.B.  
 Turner, Charles... 95, Euston-road, London, N.W.  
 \*Tyler, Henry Wing... Leicester  
 Tyrer, Joseph... Neston, Cheshire

Varness, Frederick... London  
 Vaughan, William George... 11, Soho-square, London, W.  
 Venman, John Ebenezer... 12, Durham Villas, Kensington, Middlesex  
 Vian, William Henry... 11, North-street, Exeter  
 \*Videon, Charles... London

\*Wadsworth, Richard... Preston, Lancs.  
 Wakofield, Henry... London  
 Wades, Edward George... Sunderland  
 Walker, George... 21, Maekworth-street, Manchester  
 Walker, John... 30, Dunbar-street, Edinburgh, N.B.  
 Walker, John Henry... 191, Marsh-lane, Leeds  
 Walker, William... Bolgrave-street, Darlington  
 \*Walker, William... Northampton  
 Wallace, Thomas... 116, Central-street, London, E.C.  
 Wallley, Thomas... West Derby, Liverpool  
 Ward, Joseph... Leek, Staffordshire  
 \*Ward, Philip Daniel... Halifax, Yorks.  
 Waterworth, William... Southport, Lancs.  
 Watford, Charles Harry... 70, St. Paul's Churchyard, London, E.C.  
 Watson, Frederick... Fakenham  
 Watson, James... Barking, Essex  
 Watson, Joseph... 7, Cedars-row, Lavender-hill, Surrey  
 \*Watson, Walker... Nuncaton  
 Watson, William... 7, Cedars-row, Lavender-hill, Surrey  
 \*Watts, Henry Thomas... London  
 Watts, John... Market-place, Hexham, Northumberland  
 Watts, John Newton... Great Yarmouth  
 Watts, John Thomas... Wakenham-terrace, Portland, Dorset  
 Wawn, George... 153, Essex-road, London, N.  
 Wells, Alfred... Saltney, Flints.  
 \*West, Robert Gibson... Liverpool  
 Weston, Charles... Stockton-on-Tees  
 Westwood, Henry John... Box, Wilts.  
 Wetherell, Henry Frank... 179, Westminster Bridge-road, Surrey  
 Wetherington, George... Coventry  
 Whalley, Jonathan... 77, Hannab-street, Manchester  
 \*Wheldon, Henry William... London  
 Wholpton, John... Brighton  
 Whitby, John... Stratford-on-Avon  
 White, William... 43, Kingsgate-street, London, W.C.  
 Whitehead, James... 71, Percy-street, Newcastle-on-Tyne  
 Whiteland, Richard... Long Sutton  
 Whittaker, James... 126, Hoxton-street, London, N.  
 Whittom, Joseph... 27, Thames-street, Liverpool  
 Wilkes, John... 151, Nelson-street West, Birmingham  
 Wilkinson, Charles... 28, Lower Ford-street, Coventry  
 Wilkinson, Thomas... Sheffield  
 Wilkinson, William... Blandford, Dorset  
 \*Williams, David Martin... Truro  
 Williams, Evan David... 3, Tonsley-terrace, Wandsworth, Surrey  
 Williams, Hugh R... Penryn, Cornwall  
 Williams, John... 15, Harmau-st., Kingsland-rd., London, N.  
 Williams, Morgan Edward... Cardiff  
 Williams, Thomas... Carmarthen  
 Williams, Thomas John... 162, Copenhagen-street, London, N.  
 Williams, Thomas Nash... Victoria-street, Dowlais, Glamorganshire  
 Williams, William... 13, Gibson-street, Liverpool  
 Williams, William Roderick... Maesteg, Glamorganshire  
 \*Williamson, David... Brighton  
 Williamson, James... Edinburgh, N.B.  
 Willson, Alfred Augustus... Bath  
 Wills, Charles... 277, Oxford-street, London, W.  
 Wills, Joseph... Carlisle  
 Willson, Alexander... Southampton  
 Wilson, Henry Digby... 34, Dovonshire-street, Brighton  
 Wilson, John Edward... Somersham, Hunts  
 Wilson, Thomas Davison... Sunderland  
 Willson, Walter William... Birmingham  
 Winter, John Richard... Edinburgh, N.B.  
 Wiskeu, Robert... 226, Hyde-road, Manchester  
 Witcllow, William... 2, Market, Bow Common-lane, London, E.  
 \*Witt, Henry Matthew... London  
 Witte, William Henry... 5A, Victoria-cottages, Albion rd., Stepney, Middlesex

Wood, George Edward... Dorchester  
 \*Wood, George Emilius... London  
 \*Wood, William Chancellor... Maldstone  
 Woodcock, Alfred... 184, Marsh-lane, Leeds  
 Woolley, George Hagan... Maldstone  
 Wright, Charles... 6, Great Barr-street, Birmingham  
 Wright, John... Preston, Lancs.  
 Wright, Robert... 51, Long-lane, Bermondsey, Surrey  
 Wright, Thomas Newton... 92, City-road, Hulme, Manchester  
 Wright, Thomas Williams... 28, Brassey-st., Tuxteth-park, Liverpool  
 Wright, William... Blackpool, Lancs.  
 Wyatt, Alfred... London

Yates, George... 29, Nowington, Liverpool  
 \*Yates, William... Bridgnorth, Salop  
 Yeatman, Alfred... 10, Albion-road, Hackney, Middlesex  
 Young, James Frederick... Ipswich  
 \*Young, John... Musselburgh, N.B.  
 Younger, Robert Edward... Northampton

## PHARMACEUTICAL EDUCATION.

BY PROFESSOR ATTFIELD.\*

AT the close of the prolonged discussion on Pharmaceutical Education which I had the honour of introducing at the Brighton meeting of the British Pharmaceutical Conference, time forbade a reply to the remarks I had invited. A report of the proceedings having now appeared, I proceeded to reply to some questions that have been raised, and make one or two additional observations.

The want of a succinct statement of what has already been done for pharmaceutical education in Great Britain must have been felt by every one interested in the present position of the subject. Such an account was offered in the first and chief part of my paper. The labour involved in the production of that portion was considerable, but is more than rewarded by the testimony given to its faithfulness and usefulness.

Respecting the present and prospective aspects of pharmaceutical education, some dissent from my opinions was expressed; but this, I think, mainly because what was meant by education, was not defined by me with sufficient fulness. By pharmaceutical education, pure and simple, I understand that knowledge which a man desires and acquires to fit him thoroughly for his calling, irrespective of any examination, voluntary or compulsory, or any title, legal or honorary. Having such knowledge, full in amount, but not more than is sufficient for the purpose just stated, a student necessarily, that is as a matter of course, passes the Minor and possibly the Major examinations of the Pharmaceutical Society; afterwards retaining that knowledge, together with all mental culture its acquirement has afforded. The Pharmacy Act of 1852 stimulated education of this kind. Such education demands the expenditure of a considerable amount of time on the part of the student; but the Council of the Society has always set before pharmacists a course of study of this nature as a standard, and education of this character is what has been aimed at by the promoters, managers and officers of the various schools of pharmacy which have been started from time to time throughout the country more or less in connection with, or aided or countenanced by, the Society. But there is a method of obtaining knowledge—that is, short-lived knowledge—occupying far less time than that necessary for the acquirement of the kind of education just described. Barristers and others sometimes have occasion rapidly to work up a subject for the temporary purposes of debate, argument or advocacy. It produces no sort of culture as respects the subject itself, and passes from the memory as rapidly as it entered; but it accomplishes its object legitimately enough. Persons possessing it are for the time well informed, not educated, in the subject. When, however, such information is acquired and employed for the purpose of passing such an important public examination as our "Minor" or "Major," I maintain that its use is in an ordinary sense of the word illegitimate, to be deprecated by every right-minded pharmacist, and, if possible, prevented. This is the kind of ephemeral knowledge which is confessedly taught and notoriously employed in England (not at present, apparently, in Scotland), to what many besides myself know to be an enormous extent, to enable men to pass the examinations mentioned. I find that in imparting such information, methods are employed

\* From the *Pharmaceutical Journal*.



other than the one mentioned in my paper—a process, “cheating” Mr. Stoddart and Professor Foster term it, involving downright violation of the spirit of the eighth commandment, and under which I include (and only under such) any variation in the mode having for its object the ascertaining what questions an examiner may get into the habit of asking. Questions of this kind—“stock questions,” as Mr. Carteighe calls them, some of which, as every examiner knows, must in the nature of things be put to almost every candidate—are those to which I alluded in my paper as being commonly asked, and which I mentioned as those the crammed candidate knows will be asked before he enters the room. I repeat that I think no language used in denunciation of the process can be too strong. Whatever be the process, however, it is the practice of giving and receiving mere information, and that of an ephemeral character, to which I wish to draw serious attention; a practice, the adoption of which by so large a number of students goes far to explain the cause of failure of all such more recent attempts to establish provincial schools of pharmacy as that described by Mr. Hampson; a practice which, by keeping so many students out of the classes, would, in my belief, prevent the success of the plans of education proposed by Mr. Reynolds, Mr. Schacht, or even that which “comes from Jötunheim;” and a practice which is already damaging, and which, if allowed to develop at its present rate, will sap the foundation of that true pharmaceutical education which the Pharmaceutical Society fosters and promotes, and has ever fostered and both directly and indirectly promoted in the metropolis and provinces.

With regard to the means of preventing this “coaching,” the principle of the proposal which was stated during the discussion as emanating from the examiners themselves, deserves, in my opinion, the cordial support of all pharmacists of influence or in authority. It is that of requiring documentary evidence of lengthened education in at least one, and that the most important, subject of examination. I have little doubt that if this plan were carried out, it would be found to work so successfully that it would be extended to the other chief subjects of examination. This is the plan advocated in my paper. My cherished ideas are apparently identical with those already entertained by the examiners, and hence, by the way, the contributor to the discussion, whose remarks seem to indicate that he thinks my ideas involve a low estimate of the powers of our examiners, must please extend his censure to the examiners themselves. I repeat, that so far from attacking the examiners, I support them, and give little countenance to the adoption of the method employed at the London University, of examination by special experts in each subject. It is not the examiners, but the system which the examiners have to carry out, that I venture to criticise—a system, the weak point of which is, a point in which it differs from that of all other boards, that it does not at present possess as a guarantee against excessive cramming, either documentary evidence of education, or the special searching powers of professional questioners having plenty of time at their disposal. Nay, if there is one subject in which our examiners might already be said to be professional examiners, it is that termed “pharmacy;” yet this is precisely the one in which the Board is asking the co-operation of the Council respecting power to require external evidence of education. I say that if in the subject in which the examiners are most likely to detect superficial information, they desire to have their hands strengthened by certificates of attendance for a certain number of years in a pharmacy, then any proposal that in the other chief subjects similar certificates of attendance for a stated time in a recognised school should be required, cannot logically be considered as uncomplimentary to the Board. Dr. Edwards thought that while the strong point of my paper was advocacy of thoroughness in education, its weak point was support of this scheduled system. I submit that my friend's remarks only touched the abuse of the method, and not the method itself. I can speak from eight years' personal experience of its working in a large medical school; and while I know how formerly in some schools it was inefficiently carried out, I also know how easily its abuse can be, and is now, generally prevented. Professor Redwood's suggestion that candi-

dates should be required to state where, when, and how their education had been conducted, would be useful to the extent to which it were made effective. The plan might be anything between a mere form and the recognition of certain schools, or rather certain modes of education, to the exclusion of superficial teachers and teaching. Effectually carried out, it would end, I believe, in the system I have urged for adoption. Under any circumstances its tentative value is considerable.

A few sentences on the question, “Does the prospect of remuneration warrant much outlay for pharmaceutical education, or briefly, does it pay?” Listen to Professor Markoe, himself a pharmacist engaged in trade. “What you, Professor, want to see done in England we have already accomplished in America. In the States a man is prevented, either by law or the force of public opinion, from opening a shop unless he can pass an examination, and has attended a certain length of time in a recognised school of pharmacy, as well as worked practically at dispensing. You see, we give no opportunity for the rise of ‘coaching’ or ‘priming.’ Then the expense of education keeps out of pharmacy the crowd of poor and ignorant men that would otherwise enter; and so we have a smaller number of pharmacists in proportion to population than you have, and each business, consequently, is larger; besides, our pharmacists pull together better than if they were less well educated, and so get more fairly remunerative prices from the public, and the confidence and help of the medical men.” To my remark that this course seemed to discourage brain-power unless associated with money-power, Professor Markoe answered that a pharmacist received no premium with a pupil, and thus was enabled to turn a lad away if he had no aptitude for pharmacy; or, on the other hand, to keep him, and even, after a time, pay him, and in other ways give him means and opportunities of rising. He also alluded to the system as one under which there was always a good supply of well-paid assistants. I am hoping soon to hear more about pharmaceutical education in the various States of the Union.

I do not see why the system of education I support should not in due time be adopted to the extent suggested by the Board of Examiners, and carried out from year to year at such a rate, and in such a manner, that existing interests should not in any way be affected.

## FAILURE AT BIRMINGHAM.

WILLIAM SUMNER, CHEMIST AND DRUGGIST.

A MEETING of creditors in the matter of a petition for liquidation or by arrangement by this debtor, who was carrying on business in High-street and Chapside, Birmingham, was held at the Great Western Hotel in that town on the 7th inst. There was a large attendance of creditors and representatives of creditors. Mr. James Watson was nominated to the chair. Messrs. Barber and Radcliff represented the debtor. After the reception of proofs and proxies, Mr. Barber informed the meeting that he had been concerned in the affairs of Mr. Sumner for the last eight or ten months, and had been desirous throughout that period that the debtor should appear before his creditors earlier than he had done. This, however, he refused to do, hoping that he should be able to retrieve his affairs and escape from his difficulties. He always thought that the debtor would not be able to do this, and he had pressed Mr. Sumner to meet his creditors earlier; not that he believed the trade creditors would have been benefited by it, but considered they would now be served just as well as though he had stopped earlier. Mr. Sumner had been carrying on business for some years mainly on money borrowed from his friends. During the last six or eight months he had been sued by his creditors generally, and there was a number of writs and executions issued against him, which entailed great expense. Mr. Sumner had a good business, and if he had attended to it properly he did not think he would have had to meet his creditors there.

Mr. Lomas Harrison, the trustee and receiver of the estate, then read the following statement of accounts:—



LIABILITIES.		£	s.	d.	£	s.	d.
Unsecured creditors.....					15,235	13	5
Creditors fully secured .....	7,681	17	11				
Less estimated value of securities .....	7,915	9	6				
Shown among assets .....	253	11	7				
Creditors partly secured .....	758	0	6				
Estimated value of securities .....	150	0	0				
Other liabilities.....					608	9	6
Creditors for rent, taxes, wages.....	253	8	5		227	12	5
Liabilities on bills discounted.....	1,557	19	4				
Of which it is expected will rank against the estate for dividend .....					800	0	0
Total .....					£16,871	15	4
ASSETS.		£	s.	d.	£	s.	d.
Stock in trade in High-street, Birmingham, estimated at ..					1,181	12	1
Stock in trade in Cheapside, Birmingham, estimated at....					286	17	4
Book debts, about .....	£3,607	4	4				
Estimated to produce .....					1,078	16	0
Furniture and fixtures at High-street .....					96	9	6
Furniture at Hay Hall .....					475	3	0
Fixtures at Cheapside .....					65	14	6
Plumbago in possession of Ansdell and Co. ....					1	10	0
Property as per list—							
Surplus from securities in the hands of creditors fully secured					253	11	7
					3,439	14	9
Creditors to be paid in full .....					258	8	5
Total.....					£3,181	6	4

Mr. Harrison stated that no cash book had been kept, so that the debtors' returns had to be made up from receipts and ledgers. There had been no stocktaking at regular periods, the bought ledger had been neglected for the last two years, and the style of keeping accounts was most objectionable. It was useless taking any stock purchases except those of this year. The position of the debtor on the 1st of January—was a total indebtedness of £13,070 9s. 4d.; assets, £7,829 17s. 5d.; deficiency, £10,240 11s. 11d. Comparing these figures with the debtors' present position, it would appear that there was a decrease of creditors to the amount of £1,967 18s., and a decrease of debtors to the amount of £2,271 19s. 2d. The decrease in the value of the stock was £1,531 10s. 7d.; the deficiency at the present time appeared to be £13,690 9s. The bad debts were £1,389 18s. 5d.; liabilities on bills discounted estimated to rank against the estate, £800; other expenses, £227 12s. 5d.; loss by death of horse, £35; interest on loans, £442 13s.; law expenses, £647 2s. 4d.; bank charges, £105 1s. 3d.; loss on trade from January 1st, £193 0s. 11d. Deducting from these sums, profit on horses £18, and commission on insurance £11 11s. 9d., we get the present deficiency of £13,800. It is to be regretted, said Mr. Harrison, that the debtor did not face his position in January last, as the increase in the deficiency was plainly attributable to the determination to carry on at any risk, without the slightest hope of recovering his position. Since that period, every source had been tried to pay off executions and their ruinous costs. The stock had been reduced to its lowest limit. No observation could be too strong to express censure of such reckless conduct. The trade was evidently a good one, and with reasonable attention and appreciation of a tradesman's real position, ought to have realised a handsome income.

Mr. Barber said that the estate showed 3s. 9d. in the pound, and he had an offer to make of 3s. 6d. in the pound, payable at four and eight months. The reason why the offer was not 3s. 9d. was this; that there were some ten or fifteen executions which would infringe on the three-pence. Three shillings and sixpence would be the most the estate could realise, and this would only be the case if the concern was to be carried on. If they resolved to liquidate they would not have more than 1s. 6d. or 2s. in the pound. Although they would call it a composition, the resolution would have to be to the effect that the estate should be wound up in liquidation, subject to the trustee being at liberty to sell the estate to the debtor, or any other person, for a sum which would secure 3s. 6d. in the pound.

Mr. Clark (Bristol) wished to know how they could account for the deficiency if the trade had been good, and what had become of the £13,000.

Mr. Lomas Harrison said, as a matter of fact he could not account for the deficiency unless he dealt with the whole of

the period. As a matter of opinion, he thought there had been a very good business indeed, and that the debtor ought to have made a fortune. He had, however, he thought, been a little above his business. There had been reckless expenditure in carrying on the business in High-street. He believed there had been shameful waste there, the assistants living in the most extravagant manner. A neighbour had told him that there were piles of empty sardine boxes in the back-yard.

The Chairman: If all the sardines bought had been thrown away! they would not amount to £13,000. That is only an illustration.

Mr. Harrison: Precisely; it is an illustration of many similar extravagancies. We can account for some £7,000 in one way or another.

The Chairman wished to know whether any creditor was desirous of putting any questions to the debtor, who was called into the room. Mr. W. H. Griffin put several questions as to the disposal of the trust money of the Bowen family, and the mortgage on the High-street property, which was £5,500. The original cost of the High-street shop was £7,050. The debtor was trustee for Elizabeth and Thomas Bowen, and their money was applied to the purchase of the High-street property, with the consent of James Bowen, and the knowledge of Mr. Docker, their solicitor. The Chairman said, if there were no further questions to put to the debtor, it was their next duty to consider the offer made by Mr. Barber.

Mr. Clark wished to know how Mr. Barber would realise the 3s. 6d. in the pound.

The Chairman said he understood that the trustee would be empowered to sell the estate to the debtor, or anyone else, at such sum as would realise to the creditors 3s. 6d. in the pound.

Mr. W. H. Hodgson, on behalf of Messrs. Stallard, proposed that the offer be accepted. Mr. Fallows (for Messrs. Stint and Silvestre) seconded the motion.

Mr. Clark said, as representing one of the largest creditors, he should oppose the motion, and put it to the vote. He must enter his protest against the proceedings. He had had a great deal of experience, but in the whole of his business life he never met with a case where so large a deficiency had been treated so lightly, or without any expression of opinion from such a meeting. He could not understand it, unless it was being tried to hush it up. He was not a person to press a debtor unduly, but he thought a gentleman of such skill as Mr. Harrison ought to have given them some better explanation of the deficiency. He was surprised also that the chairman had not expressed himself more strongly on the matter.

The Chairman said he attended there at great personal inconvenience to himself, and he thought it was more in form that anyone present should question the debtor. Mr. Clark could ask the debtor any question, or could move an amendment to the resolution, which, if he did, he was bound to put to the meeting first.

Mr. Clark declined to move any amendment, or to put any further questions to the debtor, as he thought it would be of little avail.

Mr. Barber said the debtor had paid Mr. Clark's client something like £1,000 this year.

After some little conversation, Mr. Clark decided to withdraw his proof, but not his objection.

The resolution, moved by Mr. Hodgson, and seconded by Mr. Fallows, was to the following effect:—"That the affairs of Mr. William Sumner be liquidated by arrangement, and not in bankruptcy; and that Mr. Lomas Harrison be appointed trustee, with power to sell the estate to the debtor, or any other person, on terms of credit or otherwise, for a sum which will realise to the creditors the sum of 3s. 6d. in the pound, payable one-half in four months, and the remainder in eight months from this date; the last instalment to be secured to the satisfaction of the trustee." This having been put and carried, a motion, instructing Messrs. Barber and Ratcliff to register the resolution, and the usual complimentary vote of thanks to the chairman, terminated the proceedings.

The following are the principal creditors:—Messrs. Aston and Borman, London, £43 9s. 5d.; Adkins, J., and Co., Smethwick, £10 9s. 1d.; J. K. Archer, Liverpool, £53 5s. 7d.; J. Aslin, Sunderland, £11 0s. 8d.; W. Aston, Birmingham, £50; Arthur Aston, Birmingham, £200; P. Bancroft and



o., Liverpool, £125 7s. 11d.; James Baldwin and Son, Birmingham, £33 3s. 4d.; Bentley and Co., High Holborn, 15 8s. 2d.; Ambrose Biggs, Birmingham, £16 19s. 1d.; W. C. Butterworth, Liverpool, £150; Bernard and Co., Leith, £17 17s. 6d.; Beardshan and Stevenson, Newgate-street, £39 18s.; Barron, Harvey, and Simpson, Giltspur-street, £83 10s. 9l.; Beal, Birmingham, £18 16s. 7d.; Bethell, Swan Village, £19 10s. 3d.; J. Brooks, Birmingham, £24 8s. 4d.; Brown and Love, Ashby de la Zouch, £30 13s. 6d.; Thomas Brown and Son, Rotherham, £85 4s.; J. Berger and Sons, London, £19 8s.; Edward Bowen, Birmingham, £150; Birmingham Banking Company (Limited), £1,571 4s. 9d.; W. H. Buckland, London, £10 10s.; Thomas Barton, Yardley, £25 0s. 10d.; Curtis and Harvey, London, £27 8s. 1d.; W. Cooper, Berkhamstead, £24; Coate and Co., Lisle-street, London, £14 17s. 4d.; County Fire Insurance Company, London, about £80; County Fire Insurance Company, Birmingham, £44; Davies and Sons, Southwark, £39 18s. 9d.; Denton and Jutsum, London, £21 10s. 10d.; Dixon, Dean, and Co., Smithfield, £14 19s. 10d.; M. Davis, Smallbrook-street, £100 4s. 4d.; William Jones, and Co., Markheaton Mills, £10 0s. 4d.; R. J. Fullwood and Co., Horton, London, £22 6s. 3d.; E. Freer, Birmingham, £24 14s. 4d.; Gidney and Clark, Stratford, London, £118 8s. 2d.; H. Grace and Co., Cornhill, £78 0s. 4d.; J. and N. Goldhill, Houndsditch, £25 0s. 6d.; Gough and Son, Birmingham, £364 0s. 11d.; James Greaves, Birmingham, £80; Harker and Co., Upper Thames-street, £11 16s. 3d.; J. Hollingsworth, Birmingham, £17; W. Hotchkiss, jun., Alden, Salop, £11; Hudson and Son, Cornhill, £20; Higgins, Liverpool, £34 16s. 7d.; Hodgkinson, Stead, and Treacher, Aldersgate-street, £60; Johnson, Bros., Hull, £52 13s. 7d.; V. T. Jones, Southwark-street, £64 3s. 1d.; Iliffe, Birmingham, £50; Isaac Jennings, Birmingham, £65; Langston, Barker, and Stagg, Lawrence Pountney-lane, £26 5s. 3d.; V. Lert, King's Norton, £58 1s. 1d.; J. H. Lees, Bacon's End, £165; Morson and Sons, Russell-square, £105 8s. 10d.; V. M. Marston, Mold, Flintshire, about £75; Maullin, Birmingham, £15 3s. 11d.; Matthews and Co., Bristol, about £200; McGgeson and Co., Cannon-street, London, £14 13s.; Marks and Sons, Great Alie-street, £36 12s. 6d.; Mayhew and Son, Birmingham, about £20; Morrell and Co., Liverpool, £33 18s. 9l.; Nossiter, Birmingham, £12 7s. 4d.; Oakley and Sons, Blackfriars-road, £33 9s. 10d.; Painter, Woodward, and Co., Bristol, £33 5s. 5d.; Palmer and Co., Bethnal-green, £38 14s. 3d.; J. Parkinson and Co., Southwark Bridge, 105 6s. 1d.; H. Pritchard and Co., London, £367 13s. 8d.; Pontifer and Wood, Shoe-lane, £13 16s. 2d.; Piercy, Long-ottom, and Faram, Worcester, £100; Phipps, Birmingham, £17 2s.; Provident Life Assurance Company, £270; Read and Jackson, Bristol, £257 18s. 5d.; S. J. Rowth, Hesterfield, £27 9s. 1d.; James Ranstoun, Hull, £90; Elizabeth Reynolds, Hay Hall, £703 4s.; Stallard and Son, Worcester, £36 6s. 6d.; Smith Brothers, and Co., Leadenhall-street, £159 4s. 2d.; Schweppe and Co., Derby, £39 12s.; J. H. Spencer and Co., Aston-road, £50 18s. 7d.; R. Sumner and Co., Liverpool, £25 3s.; Nathaniel Smith, Cheltenham, £10; G. Skey and Co., Wilne, Tamworth, £11 7s. 7d.; Sanger and Sons, Oxford-street, £7 9s. 4d.; Swindell and Evers, Wilnecote, £13 15s. 6l.; T. and J. Sumner (trustees of the late William Sumner), £1,000; Storry, Willing, and Co., £69 11s. 7d.; W. Sutton and Co., Bow Church-yard, £12 16s. 3d.; John Sumner, Birmingham, about £600; Joseph Sankey, Birmingham, £75; Shore, Son, and Davies, Birmingham, £20; Samuel Boden, Birmingham, £25 17s. 1d.; Frank Taylor, Haleswen, £153; Williams and Co., Spitalfields, £50 8s. 8d.; William Wardle, Birmingham, £14 15s. 7d.; J. Williamson and Sons, Lancaster, £19 19s. 11d.; Winship and Raymond, Hull, £18 5s. 9l.; James Watson, Birmingham, £537 10s.; Thomas Warden, Birmingham, £50 10s.; Parker and Co., Chester, £79 1s. 10l.; White, Morgan, and Curd, London, £39 10l.; Young's Paraffin and Mineral Oil Company, £2 15s. 8l.; Russum Brothers, Leeds, £13 15s. 2d.; Isaiah Mason, Pen-maker, Birmingham, £5,681 3s. 11d.; Trustees of the late William Bowen, £2,045 17s. 9d.; Trustees of the late Elizabeth Bowen, £619 15s. 4d.; John B. Silvester, Birmingham, £18 15s. 5d.; James Uily, Locominster, £31 17s.; Oak-y, Birmingham, £15 10s.; Ebb and Beardmore, Aston, £21 17s. 6d.; Eaden and Sons, Birmingham, £27.

# MANCHESTER CHEMISTS' AND DRUGGISTS' ASSOCIATION AND SCHOOL OF PHARMACY.

**T**HE Fourth Annual Meeting of the above Association was held in the new rooms, 37, Blackfriars-street, on Friday evening, October 4th, Mr. W. S. Brown, President, in the chair.

The annual report was read by the Secretary, Mr. F. B. Benger, and the statement of accounts by the Treasurer, Mr. G. S. Woolley.

The report was hopeful but expressed some disappointment that the Association had not met with more general support from the chemists of the district. The Treasurer's statement for 1871-2 showed a balance in hand of £41 5s. 5d.

The CHAIRMAN, in moving the adoption of the report and treasurer's statement, said he could not help expressing a feeling of regret that a much larger number of students had not presented themselves to partake of the advantages which the institution afforded. The object of the Association was mainly educational, and it was formed almost exclusively with a view to interest young men, who by the passing of the Pharmacy Act of 1868, were called upon to pass an examination before they were permitted to commence business as chemists. It was to be regretted that the Society had failed to connect itself with Owen's College, but he looked forward to the time when that end would be accomplished. The Association numbered at present 92 members and 71 associates, and he believed it still retained its position as the largest of the kind in the kingdom; but taking into consideration the number of chemists in Manchester and the surrounding district, from whom they should draw a large number of members, he did not think their strength quite satisfactory, and thought they might fairly look forward to an increase to double that number. The Society had never sought extraneous aid, and he hoped it would always be self-supporting.

Votes of thanks were then passed to the officers and council, and these gentlemen were re-elected for the ensuing year, viz., Mr. W. S. Brown, President; Mr. J. T. Slugg, F.R.A.S., and Mr. W. Wilkinson, Vice-Presidents; Mr. G. S. Woolley, Treasurer; Mr. F. Baden Benger, Secretary; Messrs. Barnaby, Blain, Bostock, Halliday, Hughes, Kay, Robinson, Mumbray, Hermann Woolley, J. Waterhouse, and Hall, Members of Council. Mr. W. Lane, President of the Manchester Chemists' Assistants' Association, thanked the Council for the use of the room for the meetings of that Association. The names of one member and sixteen associates were then read, and these having been elected,

The CHAIRMAN announced that the next meeting would be held on the first Friday in November, of which due notice would be given. The classes would be held and the rooms opened according to the prospectus, and the Chemists' Assistants' Association would have the full use of the new rooms as of the old, free from charge. The meeting then terminated.

## THE SUPPER.

At the close of the annual meeting thirty members and friends sat down to supper at the Blackfriars Hotel. Mr. W. S. Brown occupied the chair, and Mr. W. Wilkinson was vice. The usual loyal toasts having been drunk with musical honours, Mr. Hermann Woolley proposed "The Pharmaceutical Society of Great Britain," alluding in his remarks to the pleasant recollections he had of time spent in the school at Bloomsbury-square.

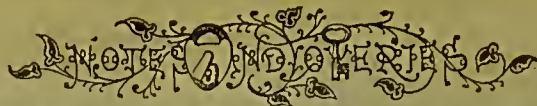
Mr. W. S. Brown, vice-president, responded. Mr. W. Wilkinson, local secretary, also replied to the toast.

Mr. W. Bostock then proposed "The Pharmaceutical Conference;" and Mr. F. B. Benger responded.

"The Medical Profession," proposed by Mr. J. T. Slugg, was ably responded to by Dr. Downs, of Stockport, who expressed the great pleasure it gave him to be present, and witness the cordiality and good feeling which existed amongst the Manchester chemists. He felt sure that with such unanimity the success of their school of pharmacy was certain.

"The Manchester Chemists' and Druggists' Association," by Mr. Linay, "The Chemists' Assistants' Associations," and other toasts, followed; and a very pleasant entertainment closed with an expression of general satisfaction with this inaugural social gathering, and a hope that such might be continued, at least annually.





M. B. wishes to know if there is any machine in existence for silvering pills. Any reader who will give the information will much oblige.

D. P. wants a LIME CREAM POMADE that will keep. There is no such thing as Lime Cream, and if this pomade with that misleading name must be had, it is surely unnecessary for the pharmacist to save his conscience by endeavouring to mix some lime water into a pomade. We have, however, seen one formula with that ingredient, which is to dissolve spermaceti in almond oil, and stir in lime water to half the quantity of the mixture. One part of spermaceti is sufficient for eight parts of almond oil. We cannot say whether this will keep exceptionally long, but we may add that all pomades should be kept from the light.

G. W. J. (Ross).—Koumiss is milk which has been subjected to vinous fermentation. It is a common beverage and medicine among the Tartars, but how they prepare it is not exactly known. Mr. J. T. George, surgeon, of Keith, has published a method which he says answers well, and which he obtained from a Russian gentleman. It is as follows:—"Take of newly-drawn milk any quantity; add to it a little water, and pour the mixture into any vessel. Use as a ferment an eighth part of the sweetest cow's milk that can be got—but at any future preparation a small portion of old koumiss will better answer this purpose. Cover the vessel with a thick cloth, and set it in a place of moderate warmth. Leave it at rest twenty-four hours, at the end of which time the milk will have become sour, and a thick substance will gather on the top; then with a stick, made at the lower end like a churn staff, beat it until the thick substance be thoroughly blended with the subjacent fluid. Leave it again at rest for some time; repeat the beating, after which pour it into a narrow vessel like a churn, agitate the liquor until it be perfectly homogeneous. When bottled for keeping it is necessary that the bottles should be only partially filled, and that the corks should be fastened like lemonade bottles."

R. Fox (North Shields).—The Pharmacy Act does not interfere with bona fide wholesale druggists. A "registered assistant," or an unregistered one, may call himself a wholesale druggist, but he may not under shelter of that title contravene any of the other regulations of the Act.

T. B. (Wigan).—The Secretary of the Pharmaceutical Society, 17, Bloomsbury-square, London, will furnish you with all necessary information about the preliminary examination, gratis. No "form of questions" is published.

This answers several other correspondents.

T. Green (Newport).—A Pharmacy Act somewhat similar to our own has been in operation in Canada for nearly two years.

J. U. Pain. —CHLORODYNE.—No end of chlorodyne formulae have been published both in this journal and in others. The following is one of the latest; the author of which is Mr. Edward Smith:—

R. Chloroformi . . . . .	f. ʒiv.
Morphiæ mur. . . . .	gr. xx.
Ethr. rect. . . . .	f. ʒij.
Ol. Ment. Pip. . . . .	℥viij.
Acid. Hydrocyan. dil. . . . .	f. ʒiv.
Tinct. Capsici . . . . .	f. ʒvj.
Mist. Acaciæ . . . . .	f. ʒj.
Theriacæ . . . . .	ad. f. ʒiv.

ANDAMAN.—Wood oil or Gurjun balsam is the product of Dipterocarpus turbinatus, and other allied species of Dipterocarpus common over all the eastern parts of India and the Malay islands. It bears a remarkable resemblance to Copaiba balsam, and but for its much darker colour, might be readily mistaken for the same, as its odour and taste are similar though not so marked. Such limited supplies as have reached this country have been chiefly derived from Moulsin, and the article has been placed on the London market to pass as Copaiba. From this latter it differs in one important property, first observed by Mr. Lowe, viz., when heated to 280° F. it becomes strongly gelatinous. This curious property of wood oil constitutes a good test for its detection if substituted for Copaiba. Dr. Do Vry has also observed that with an equal volume of benzol it forms a turbid mixture which ultimately deposits a flocculent substance. With Copaiba no such result ensues. Wood oil has a sp. gr. .964, is of a dark brown colour, and of a consistency somewhat greater than olive oil. Roxburgh states that it is much used for painting shops, houses, &c., and gives some particulars as to the mode of collection. A large notch is cut into the trunk of the tree near the earth (say about 30 inches from the ground), where a fire is kept until the wood is charred, soon after which the liquid begins to ooze out. The average product of the best trees during the season is said to be sometimes forty gallons. Gribourt is of opinion that Wood Oil is not like Copaiba, a natural product, but is in part the result of a liquid modification of the Dipterocarpus resin effected by the agency of heat.

J. Wilson (Purith).—Johnston's Elements of Agricultural Chemistry, published by Blackwood, at 6s. 6d., will give such information as you require.

J. H. P. enquires as to what is the non-conducting substance employed by conjurers who take red hot iron in their hand, or walk on it? Can any chemist kindly inform him through us.

OMEGA.—If a receipt for the whole specifically is given at the end you must use a receipt stamp; but if the receipt is simply given for each instalment no stamp is necessary. True, if you say, "Received five shillings on the day of," no stamp would be necessary; but if you say, "Received the whole sum of £2 15s. by various instalments," you must affix a stamp.

Seeing that we have recently interested ourselves in certain eyrups designed to relieve babies and their nurses, Mr. Fox, of Nethells, Birmingham, is good enough to send us a sample of his Teething Syrup, which he assures us contains no opium or poppies, nor any injurious narcotic. Why Mr. Fox should try to damage the reputation of his own article we cannot say; but truly enough we read on the handbill, in prominent type, "Observe—this is not a soothing eyrup."

Initio writes from Liverpool:—As one who always has felt interested in the success of the CHEMIST AND DRUGGIST, on account of its fair and catholic advocacy of the interests of the trade, I hope I may be allowed, without being deemed intrusive, to offer an expression for your approval.

I think a trade journal should be published oftener than once a month, and moreover that it should not be so exclusively devoted to science, as there are many matters of daily and hourly need in business quite as important as the dry and hard facts of chemical or other science. In short, I would most respectfully propose that a paper intended for circulation amongst the chemists and druggists should be published once a week, and partake of the character of a weekly newspaper as well as of a scientific magazine.

We are much obliged for the friendly tone of this letter, but we think our readers will not generally agree with Initio that the CHEMIST AND DRUGGIST is by any means "exclusively devoted to science."

We cannot undertake to answer anonymous communications, nor to send replies to pharmaceutical queries through the post. We are always much obliged to kind friends who send us cuttings from, or marked paragraphs in, provincial and foreign papers.

TESTING HYDROCHLORIC ACID.—A very delicate test for sulphurous and arsenious acid in hydrochloric acid, given in the German pharmacopœia, is worth mentioning. In a test tube are placed a few small pieces of pure zinc, to which is added hydrochloric acid previously diluted with two parts of water, so that about one-tenth of the tube is filled. In the upper part of the latter is introduced some cotton moistened with solution of subacetate of lead, and the mouth of the tube is covered with some filtering paper dipped in solution of nitrate of silver. In case sulphurous and arsenious acid are present, the cotton as well as the filtering paper become blackened after the evolution of hydrogen gas has lasted about half an hour. This test is so delicate that  $\frac{1}{4}$  milligramme of arsenious acid ( $\frac{1}{100}$  grain) can be detected in 1,000 grammes (two pounds) of acidum hydrochloric by the silver paper becoming distinctly brown coloured.

*Elisir pepsinatum Hottot-Boudault.*

R. Pepsini cum acid. lactico, gm. 3 (45 grains).  
Aq. destillatæ, gm. 50. ʒj. ʒv. ʒ.  
Syrup. ribium rubr.,  
Syrup. sacch., aa gm. 30. aa ʒj.  
Spiritus gari, gm. 40. ʒj. ʒij. ʒij.  
Misce et filtra.

*Elisir pepsinatum Grimault.*

R. Pepsini acidificati, gm. 2-5. ʒij.  
Vini gallic. albi, gm. 60. ʒij.  
Syrup. sacch., gm. 25. ʒvi. ʒij.  
Spiritus gari, gm. 25. ʒvi. ʒij.  
Acidi citrici,  
Acidi muriatic dilut., aa gm. 1. aa 15 grains.  
*Tinctura Rusci. Dr. Hebra (Vienna).*

R. Olei rusci, ʒij.  
Spir. vini rectificatiss.,  
Æth. sulp., aa ʒj.  
Olei rutæ,  
" lavandulæ,  
" rorismarini, aa gtt. x.  
Let stand for some days, then filter.





## DANDRIF.

(TO THE EDITOR OF THE "CHEMIST AND DRUGGIST.")

SIR,—I have this day seen an article in the February number of your very valuable periodical, "Hair and its history," being a review of a work by Dr. Godfrey, on "Diseases of the Hair," in which the following sentence occurs:—In one case (dandriff) we are told to use cod-liver oil externally, internally, and eternally. We may here mention a curious remedy for dandriff, which is published in a recent number of the *American Journal of Pharmacy*. The writer (Mr. John L. Davis) put one ounce of flowers of sulphur in a quart of water. The mixture was allowed to stand for a few hours, and was in the meantime repeatedly agitated. The clear liquid was then poured off, and the head saturated with it every morning. In a few weeks every trace of dandriff had disappeared, the hair became soft and glossy, and now, after a discontinuance of the treatment for eighteen months, there is no indication of the return of the disease.

Now, I should like to ask the question, is dandriff a disease? is it not the normal condition of all animals covered with hair or feathers? Is it not, in fact, a natural exudation from the skin, and common to all parts of the body—except perhaps the soles of the feet, and the palms of the hands—and only more perceptible in the head because here the hair holds it, whereas from all other parts of the body it is carried off by the friction of the clothes we wear? Did anyone ever see the disease in a perfectly bald man? Prove it in another way; tie a piece of cloth, a silk ribbon or instance, firmly, but not too tightly, round the fore arm, let it there remain for a few days—say a week—and then carefully remove it, and I will undertake to say the skin, gently rubbed with the finger, will exhibit the usual scales of dandriff plentifully. Query, is not this an effort of nature, to purge and purify the body of what is not required for the formation of bone, blood fibre, or muscles, just as much as any other of our evacuations are? Would its absence not be more appropriately called a disease, than its presence?

Believe me, Sir, I do not write this in any spirit of fault-finding, but, simply as an earnest inquirer after truth. I make no pretensions to medical or scientific knowledge, but living many years ago, when a young man, been much annoyed with dandriff, I got completely rid of it by keeping my hair cut short, and the constant use of the brush. That as nature threw it off, I removed it, and this led me to form the opinions I have here—perhaps imperfectly—tempted to express.

Yours, etc.,

J. H.

Maitland-park-crescent,  
Averstock-hill, London, N.W.

September 19, 1872.

## ASSISTANTS' SALARIES.

(TO THE EDITOR OF THE "CHEMIST AND DRUGGIST.")

SIR,—May I be permitted to re-echo "Manchester assistants' complaints respecting chemists' assistants' situations in general, and ours (Manchester) in particular? His case of such long hours is by no means an exception; the contrary, I know a great number (myself included) whose hours are from 8 a.m., to 10.30 p.m., and a fair amount of Sunday work, and night duty. We do not even so much as get our *cibus* in peace. We are (where only one assistant is kept) generally disturbed about half-a-dozen times. And for all these long hours, and other miscellaneous hardships we have to endure, we receive the very small amount of—what (?) say, on an average, £30 per annum;—"pro re nata" a little more, *p.r.n.* a little less. Now, Sir, is that an enviable position to be in? Yet we do it like to quit it (as S. Jones advises, by "keeping back our services," etc.) for fear of "jumping out of the frying-pan into the fire."

Mr. Editor, I think you will agree with me—for I am persuaded all assistants will—that although we cannot succeed in getting "assistants" 50, we may at least deem ourselves entitled to 20 or 25 per cent. extra (half a loaf being better than no bread), and a "leettle" additional time for recreative pursuits.

Your answer to my query in this month's journal (for which I render my sincere thanks) to "attend the course of lectures which the Manchester Chemists' Association will provide this winter," is in my case (and in many more instances) impracticable; for, after running about all day, when closing-up time comes (?) we feel much more inclined for a little light reading—or some slight recreation, and then bed—than attending lectures, studying, etc.

I do sincerely trust this subject will have the earnest consideration of all chemists' assistants, more especially here in Manchester; and that the stone will be kept rolling by gentlemen more influential than myself—with an occasional impetus from the Editor of the *CHEMIST AND DRUGGIST*—and not allowed to stop until we have had a hard struggle to gain our point, remembering "United we stand," etc.

Knowing the great value of the columns of this "far and near" circulated journal, I ought to have condensed this much more; but the knowledge that you, Sir, have ever been ready—and always are—to advocate any just cause, must be my excuse for occupying so much of it.

I am Sir, most obediently yours,

Manchester, September 25th, 1872.

M. T. J.

(TO THE EDITOR OF "THE CHEMIST AND DRUGGIST.")

SIR,—Several lengthy and sensible letters on the above subject, which have been kindly published by you, render it unnecessary that I should trespass far upon your valuable space; yet with your permission, I will just state what I think to be the best mode of getting out of the "difficulty"—for assuredly if a remedy is not applied, it will speedily end in such.

If the masters really think they cannot, under existing circumstances, grant us a 50 per cent. advance, why of course they can easily put themselves in a position to do so, simply by advancing the price of "drugs," etc., say 10 or 15 per cent., which would not only enable them to pay us the £30 or £40 extra salary, but at the same time leave them four or five times that amount as extra profit for themselves at the year's end. This, I think, would be the most amicable way of settling the matter, and is, at the same time, a movement strictly in accordance with the spirit of the times, therefore should be adopted without further pressing. Failing this, we must have a "Union," and thereby, we shall certainly gain our end.

Yours, etc.,

AN ASSISTANT.

(TO THE EDITOR OF THE "CHEMIST AND DRUGGIST.")

DEAR SIR,—Permit me to beg a little space in your columns, to endorse the views of your correspondents, which appeared in your last number, respecting "assistants' salaries."

It is said that our salaries have been nearly doubled within this last quarter of a century, and I ask, Why should not such be the fact?

Why not keep pace with the times? Are not our requirements and duties greater now than then? We all know that before the Pharmacy Act was passed, any person was allowed to open a shop as chemist and druggist, whether he had served an apprenticeship or not. There were then no examinations to pass, and nothing beyond the mere routine of the shop and the counter to attain, to enable him to carry on business as chemist and druggist; consequently his requirements were not comparable with ours.

When I look around and reflect on our poor wretched salaries, and compare them with the wages of mechanics and other tradesmen, many of whom only work nine hours a day, I wonder why we are not remunerated for our services as well as they. We constantly hear of their earning their 20s., 30s., and 40s. per week, and their work is simply mechanical and practical.



Why should we look back and say that because our salaries were only so much once, we ought to content ourselves with the same now? Science has advanced since then, and is still advancing with all its responsibilities, and why should not we also advance to meet them?

The fact is, we must care for ourselves. Speaking in a broad sense, masters are cold and indifferent to the interests of apprentices and assistants, although there are a few honourable exceptions; there are those who strain every possible effort, and give every facility to their young men for advancement in their studies, even to their own sacrifice.

I fail to see the force of your argument with respect to the advance in price of household articles, as there are outdoor as well as indoor assistants, and, of course, they must bear the brunt of their positions; and why do masters prefer indoor to outdoor assistants? Is it not because they can reap to some extent pecuniary advantages?

Neither can I see any reasonable ground on which you base your argument for decreasing our salaries.\* I should say that, so far as the business of a chemist and druggist approaches a profession, so surely will the purse of the assistant, who has nothing beyond his earnings as such to depend upon, oftener come to grief; and unless there is an advance in his salary, he may wish that his eyes had never been so fortunate as to behold the red and blue bottles which adorn the chemist's windows.

The red may be supposed to indicate *danger*, and the blue *caution*, to the young aspirants. Because one man chooses to hang himself, is the circumstance of his doing so any just reason why another should follow his example?

If doctor's assistants, lawyer's clerks, and curates, are satisfied with the wretched salaries usually paid them, let them remain so. I maintain that these gentlemen being so miserably paid is no sound argument why we, or any other branch of business, should submit to the same. Should not every man be paid according to his merits?

For our mutual protection, I strenuously advise our assistants to form an association among themselves for their several interests, and to cause their masters to consider the exigencies of their positions.

I am, dear sir,

Yours truly,

Homo.

Leeds, October 7th, 1872.

\*Homo appears to be one of those careless readers who do not think it worth while to understand an argument before criticising it. We never urged that assistants' salaries should be decreased; we simply pointed out that the reason given by many mechanics for an advance of wages, namely, the advance in price of housekeeping necessaries, had no force, at least, for such assistants as boarded with the masters. Clearly its force goes the other way.—[Ed. C. and D.]

### "PITY THE SORROWS," ETC.

#### TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I should think you are nearly tired of hearing complaints about assistants' salaries, but I shall feel thankful if you will allow me through your journal to say a little more on the subject. As an assistant I will state the salaries I have received.

I went to the business in March, 1859. My first employer disposed of his business in September, 1862, and I remained with his successors for six months, at 10s. per week (outdoor). I then re-engaged with my teacher and first employer (who had removed to London) for a salary of £10 per year, indoor. My next remove was to Berkshire, where I went to work, eighty hours per week, for the same amount. I soon afterwards found myself dispensing for a surgeon at £20 per year, indoor. Fifteen months after this I was managing a branch shop in a small town at £50 per year, outdoor, which sum my employers, without my asking it, kindly increased to 25s. per week. I next engaged with a chemist and druggist in South Wales for £40 per year, indoor; I left that berth and returned to my previous employer, from whom I received 12s. per week, indoor. My next remove was in December, 1868, to my present situation, for £40 per year, indoor. After eleven months I arranged with my employer to live out of the house for 28s.

per week, which sum, after twenty-one months, without any solicitation on my part, was kindly raised to 30s. per week, where it remains at present.

Now, Mr. Editor, whatever others may think, I believe myself very well off indeed in regard to salary, when we consider what despicable returns the drug business gives. I must state that all the time I have been in the business I have had to work long hours. When an apprentice they were from 7.30 a.m. to 9.30 p.m., 11.30 on Saturdays, and one hour and a-half off. I had also Sunday duty. In London they were from 7.30 to 9.30, one hour off, and no Sunday duty. In Berkshire, 7 to 9.30, one hour off. In Wales, 8 to 10.30, 11.30 on Saturdays, and one hour off, and six and a-half hours' duty on Sunday. When I first came to Manchester they were from 8 to 10, and 12 on Saturday; no Sunday duty, or rather optional. Now I work from 8 to 9.30, and have one hour and a-half off. The "off" hours are for meal times.

I am well aware that many young men have to work longer and later than I have; but I think that seventy-four hours per week at the most disagreeable business there is, are quite enough for any man. I will, however, give a little advice to all assistants who are not content with their lot. Our position as assistants will not be ameliorated until our employers find themselves better off in this world's goods; and no wonder, for the drug business in England is (thanks to the Pharmaceutical Society) fast sinking to the dead-level of Continental pharmacy, and if the education hnbub keeps on, we shall become like the dull, heavy, sleepy, sauerkraut-eating young men that assist in the German shops, or the long-haired, unbusinesslike French assistants.

Nearly all English assistants intend going into business on their own account, but the chances of success—in fact, of anything beyond getting a bare living, just enough to keep body and soul together—are very small indeed. The CHEMIST AND DRUGGIST lately said "that the more our business approaches a profession, assistants' salaries are likely to become smaller." This granted, it follows by parity of reasoning that employers' returns will be less; and so when we have got to the scientific status of the Prussian or Russian pharmacist, we must barter commercial interest and enterprise for police surveillance and compulsory fetters on what was once a free trade. It is this splendid (?) state of things which our education agitators are endeavouring to bring about. The very idea of giving a youth a classical education for a profession which is second to none in carking care and wearying anxiety, and which, if conducted honestly, yields less profit than a so-called working man's wages, is so monstrous that one wonders how English people can find it in their hearts to put their children to it. Moreover, a young man is to be "well up" in the trade, and has to pass difficult examinations in order to dispense a prescription occasionally, and sell pennyworths of laudanum, pints of paraffine oil, halfpennyworths of whitening and black pitch, together with other such *bonbonneries*. No wonder that the drug business is commercially sinking, the many unnecessary restrictions, such as mixing soot with small quantities of arsenic, and thus rendering it useless for killing vermin; the compulsory registration of sales of potass pruss., Prussian blue, etc., the ridiculous Benzoline regulations (more ridiculous still if Mr. Ellis's foolish candlelight suggestion be carried out), and the patent medicine stamp farce have combined to reduce the trade to a terrible state of mechanical slavery, from whose shackles common sense alone will free it. Now, Mr. Editor, my advice to the afore-mentioned assistants is this: Look out for situations in some other occupation; if you can afford it emigrate, say to such a place as Canada, and get into the agricultural line; better be farm-labourers at 6d. per hour, than druggists' assistants at 4d.; try for situations in grocers' shops, where the work is easier and better paid, or may be you can get into warehouses; anyway leave the drug business to the care of the Pharmaceutical Society, which has for years tried to spoil it, and then, perhaps, when few care to follow the business, as in Germany and Russia, things may get better.

Your publication of this will greatly oblige,

Yours truly,

DISAPPOINTED.



## THE SALE OF PARAFFIN, BENZOLINE, ETC.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I have observed a note from Mr. E. C. Ellis in your last issue complaining of the danger we run in selling paraffin, benzoline, etc., after 6 p.m., and winding up with the hope that Parliament will step in and restrict the sale of such articles to certain hours. I thought we had plenty of restrictions, what with the Pharmacy Act, the Adulteration Act, etc. I shall not be surprised if we are coming to the same state as my poor friend the publican, and be compelled to open and close our shops at a certain hour each day. For Mr. Ellis's comfort allow me to state that I sell paraffin oil at any hour, but not such as is inflammable under 100°, and draw it from a cistern in the cellar by an ordinary beer pump, and it is forced into one of Forrest's patent measuring apparatuses. I have frequently served thirty or forty customers with the oil in quantities from half a pint to one gallon after 6 p.m., and shall continue to do so until it can be proved that there is any more danger, or as much, as there is in a publican drawing me a glass of spirit after dark. As regards benzoline, it is an article which I would not have on my premises on any account, unless put up in small bottles secured by a seal. Naphtha, being equally dangerous, I refuse to meddle with after dark. I think, without any further regulations from Parliament, the sale of such articles may be safely left in the hands of the retailer, allowing every man to take such precautions as he may consider necessary for the safety of himself and the public.

Yours truly,

ALEXANDER ELLIS.

Skelton-in-Cleveland, October, 1872.

## TINCTURA FERRI PERCHLORIDI.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—My attention has been directed to the abstract in your September number, page 298, of a paper by Mr. T. H. Austwick respecting the Tinct. Ferri Perchlor. What he recommends as an improvement in making this preparation worthy of notice, for by the old method given in the Pharmacopœia, we only obtain a solution of ever-varying strength from the precipitation of the iron haloid. I am, however, of opinion that in whatever manner it may be improved, it will still partake of the disagreeable flavour by which it has all along been characterized, and which renders it so objectionable to patients, and to children especially. On this account no longer prescribe it; but I now use instead "Maugham's Compound Solution of Iron," the iron in which is neither precipitated by ammonia nor by the fixed alkalies, and it readily dissolves quinine. It seems only to be affected by tannic and gallic acids. I have used this solution very extensively, and medical men will find it most convenient and efficacious, where the use of iron is indicated, as it is void of any unpleasant taste, and with syrup forms an agreeable mixture.

Yours, truly,

SAVILE COOMBS, M.R.C.S.

Wandsworth-road, S., September, 1872.

EAST DISPENSARY, LIVERPOOL.—At a meeting of the general committee of the above dispensary, on Thursday, 11th, the 5th instant, Mr. Sam. Wylde, jun., was elected dispenser.

THE Concentrated Pure Malt Vinegar Company has opened depot for its high-class vinegars at 115, Cannon-street.

A CIRCULAR will shortly be sent to every registered chemist and druggist, and to every coroner, from the Pharmaceutical Council, explaining exactly what regulations are to be observed in the sale of vermin killers.

ONE lady has already taken advantage of the new regulations, and has commenced attendance at the pharmaceutical lectures.

MR. CLARKE, Chemist (of blood-purifying celebrity), Lincoln, has presented a gigantic stone figure of a Lion, to the Lincoln Arboretum. It was drawn through the City of Lincoln with bands playing and colours flying; the inauguration was attended with great ceremony.

## GAZETTE.

## ARRANGEMENTS OR COMPOSITIONS.

- CODD, CHARLES EDWARD (trading as Charles Codd and Co.), 79, Copenhagen-street, Islington, and Crescent-road, Crouch End, soda water manufacturer.
- COLLINS, HENRY BIGGIN, Holloway-street, Exeter, drysalter.
- COOK, ROBERTSON, and ALEXANDER JOHNSON (trading as Robertson Cook, Johnson, and Co.), Imperial Works, Bromley-by-Bow, manufacturing chemists.
- COTTERELL, JOSEPH FRANCIS, late 3, Baldwin-street, Bristol, aerated water manufacturer.
- FORSTER, ROBERT JAMES, 11 and 12, Osborn-place, Osborn-street, White-chapel, mineral water manufacturer.
- GREAVES, WALLACE MCGUFFEN (trading as Wallace Greaves), Snape-street, Higher Audley, Blackburn, colour manufacturer, general drysalter, and manufacturing chemist.
- HUDSON, JOHN WILLIAM, Linthorpe-road, Middlesbrough, pharmaceutical chemist.
- KENNER, GEORGE JOHNSON, 74, Jesmond-road, Newcastle-upon-Tyne, and Wellington-street, Gateshead, and Jarrow, Durham, alkali manufacturer.
- PHILLIPS, JAMES ACQUSTUS, Canton, near Cardiff, soda water manufacturer.
- SEARLE, GEORGE CLEMENT, Liscard-road, Egremont, formerly High-street, Tewkesbury, Gloucester, surgeon.
- SMITH, WILLIAM ABBOTTS (otherwise known as Abbotts Smith), 45, Euston-square, late 7, Priests-street, Hanover-square, and Cheshunt, Herts, M.D.
- SUMNER, WILLIAM, 97, High-street, and 22, Cheapside, Birmingham, chemist and druggist.
- WILLIAMS, JAMES, The Mount, Malvern, doctor of medicine.
- WRIGHT, JOHN WALTER, 13, Lower Hillgate, Stockport, assistant to a chemist and druggist.

## BANKRUPT.

MCKENZIE, JOHN, Rochester, Stafford, surgeon.

## SCOTCH SEQUESTRATION.

MASON, THOMAS, St. John-street, Perth, druggist.

## PARTNERSHIPS DISSOLVED.

- BARKER and GREEN, Wantage, Berks, surgeons' apothecaries. Debts by Walter R. H. Barker.
- OWEN and MERTENS, 13, St. Mary-at-hill, London, wholesale grocers.
- PATTINSON and BOYD, Church-street, Caldewgate, Carlisle, wholesale and retail grocers and druggists. Debts by Ann Pattinson.
- ROPER, JOHN and Co., Whitehaven, Cumberland, wholesale soda-water manufacturers. Debts by John Dickinson, Catherine-street, Whitehaven, accountant.
- TAYLOR, ROBERT, JAMES ROUNDS, and JAMES DALTON, 30, Jane's-place, off Norman-street, Rochdale-road, Manchester, manufacturing chemists. Debts by James Rounds and James Dalton.
- WHITBY and DEACON, Ottery St. Mary, Devon, surgeons.

## Exchange Column.

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

## DISPOSALS.

- Williamson's "Chemistry." New. 23/601
- Gum Benzoin. Good. 1s. 9d. per lb. 58/601.
- Soda Water Table. Maw's Catalogue, No. 63, £2 10s. Buckham, chemist, Leominster.
- A Cabinet of Materia Medica. Good, and complete. Price, 1 guinea. 33/601.
- Offers wanted for "Pharmaceutical Journal, 1863." Unbound. Chemist, 10, Allcard-street, Liverpool.
- 1 lb. Hypophosphite Soda, 28 bottles Judson's 6d. Pink Dye, 12s. Beal and Son, Ilford.
- A Maw's patent Tinet. Press; large size. Offers wanted. Peake, 44, Market-street, Stalybridge.
- A Water Bed. Nearly new. Only been used a week. 6 ft. by 2½ ft. Wholesale cost price £5. To be sold for £3 10s. 39/601.



- Seven** 2-gallon Show Carboys, pear-shaped, 3s. 6d. each. Also 4 Cast Metal Brackets for Carboys, 3s. each. McCulloch, Chemist, 61, South Bridge, Edinburgh.
- Counter Shelves**, 141 Drawers, 169 Bottles, Desk, Show Jar, Double Pill Machine, Scales, Iron Mortar. All perfect and bargains. White, Litcham.
- Hand-mill**, with Pair of Stones for grinding Sugar, Saltpetre, etc. Grinds  $\frac{1}{2}$  cwt. an hour. Price £5, valued at £10. S. J. Potts, chemist, Mansfield.
- 4 lbs.** Essence Coltsfoot, 1 lb. Essence Chocolate, 2 lbs. Essence Horehound, 2 lbs. Essence Paregoric, made by Bush, London, offers wanted. 15/601.
- Five hundred dozen** (or less) Indian Vegetable Flesh Rubbers, at 2s. 6d. per dozen. Apply to G. Downman, chemist, Southampton.
- First-class Octagon Shape Lamp.** Complete, with Bracket. Ruby, Blue, and Green coloured Glass. Price 30s. Cost £4. R. Lyon, 16, Brook-street, Ipswich.
- Twelve Clark's Polyalthic Syrup**, 6s.; 2 6-lb. tins Corned Beef; 3 ditto Boiled Beef, Crosse and Blackwell. 15s. the 5 tins. Corke, chemist, Ticehurst, Hawkhurst.
- Attfield's "Chemistry"**, 9s. 6d.; Lawrence's Gentlemen's Flesh Gloves, No. 2, 1 pair. Offer wanted. Wilson, Walsham-le-Willows, Suffolk.
- A set of Forceps** by Mather, with Fox's tooth-key. Complete in Mahogany Case. Price two guineas. Cost £4. Apply Mr. Maudson, Parkwood Springs, Sheffield.
- Pill Machine**; 9 ls. 1 $\frac{1}{2}$ d. Well's Corn Lotion; six Carboys; Dispensing Screen; set Cupping Instruments; Forceps. Smith, Forton-road, Gosport.
- Handsome Gold Lettered Show Frame.** Arms, etc. Scales. Plate Powder. Rat Poison. Wanted, 3-gr. Pill Machine. Carrington, Chemist, Wincanton.
- "English Mechanic,"** 100 numbers; and Webster's "Dictionary," 3 vols. Offers wanted or Exchange. Address, J. G., 15, Scotland-street, Sheffield.
- Isinglass.**—About 1 cwt. of Isinglass pickings, suitable for Brewers' finings, 2s. 6d. per lb. Sample lb., 30 stamps. Burdon, Meat Market, Bury St. Edmunds.
- One of Southall's Materia Medica Cabinets**, new in August last, specimens all complete, in lock-up case. Cost 25s.; 17s. Taylor, 47, Blackfriars-road, S.E.
- Thirty half-yearly volumes** of the *Lancet*, from 1847 to 1865. Bound in cloth. In good condition. Offers wanted for the lot or for single volumes. Crook, chemist, Mirfield.
- At less than half price**, about 2 cwt. of 2 oz. Block Black Lead, including Ricket's Diamond and other makes. Send 2 stamps for sample and particulars. Scott, Chemist, Rochdale.
- Binocular Microscope**, first-class, quite new, with Polariscope, and other apparatus, in handsome polished mahogany cabinet. Only £10 10s. Apply B., 151, Hoxton-street, N., London.
- For sale** about 250 pounds McDougall's Sheep-dipping Composition, in various sized Tins. Bees' Wax or saleable patents taken in exchange. Apply, James H. Watson, Rose Corner, Norwich.
- "Cæsar,"** "Key to Cæsar," Pharmacopœia Lond., "Principia Latina," Isbister's "Grammar," "Pereira," Milton on "Gonorrhœa." Cost 22s.; for 14s. T. Brown, 238, Oldham-road, Manchester.
- £20.** A large variety of Photographic appliances, including Lenses, Cameras, Printing Presses, Head-rest, Baths, Slides, Glasses, etc. One Camera alone worth the money. Apply to 74, Edgware-road, London, W.
- Coffey's Still**, Condensing Apparatus, Steam Pans, etc.; suitable for small laboratory; in thorough working order. Cheap. For description, price, etc., address, Tanner, Fairfield Pharmacy, Liverpool.
- Two Pear-shaped Globes**, ten gallons; one Show Jar, thirty inches high, Magnesia and Royal Arms. Mahogany Stands, with Brass Rollers. Cost £11 10s. Will be sold for £5. Lynch and Bateman, Manchester.
- Hooper's Air or Water Bed**, with central tube, 36 in. by 72 in. Quite new. Only been used two days. Also two Waterproof Sheets for Bed, and Bellows. Wholesale cost price of all £10 10s., will be sold for £7. 38/601.
- One dozen Bandine.** Ten Band's Iodine. One Buchan's Ointment. Two dozen Mollard's and Violet Soaps. One 11s. De Roos' Guttæ Vitæ. One Barry's Tricopherous, for cash or exchange. Butler, chemist, Tunbridge Wells.
- Farre's abridgement of Pereira's "Materia Medica,"** 1865, unsoiled, 15s., Smith's "Principia Latina," eleventh edition, 1868, new, 3s.; Colenso's "Arithmetic," 1864, 2s. 6d., also Attfield's 2nd, for Bentley's last edition. J. Beauchamp, Mr. Tuck, Tiverton.
- To Dentists and others.**—two Portable Nitrous Oxide Gas apparatus. Complete. Nearly new. One an Edwards' Patent; with a 50-gallon bottle of liquid gas to each. Cash price £4 5s. and £3 10s., or exchanged for suitable patents. 18/601.
- A Bargain.**—One Flat Mahogany Counter Case, with Shelves inside rising from front to back. Top lifts up. 4 ft. by 2 ft., 9 in. deep. Also 2 Flat Soap Cases, Mahogany, 12 in. by 16 in., and 9 $\frac{1}{2}$  in. by 13 in. Address, S. Parker, Leeds-road, Bradford.
- Four and a half dozen Adshead's Mice Poison**, assorted. 2 dozen Adshead's Phosphor Paste, assorted. 2 dozen Sea Moss Farine. 1 box Nixey's Lead, 4-oz. size. All in the best condition. Either in exchange or on sale. Offers requested. 50/601.
- Piesse's "Perfumery,"** 6s. Muspratt's "Chemistry," £3 3s. Johnstone's "Agricultural Chemistry," 2s. 6d. Price sent of any second-hand book, any subject. "Chemicus," 4, Durham-place, Seven Sisters'-road, Holloway, London, N.
- Pills**—Snook's, Sydenham's, English's, Bright's, Walker's, Ing's, Morrison's, Armstrong's; Marshall's Cerate, Freeman's Spirits, Oxley's Essence, Roberts' Antiscorbatic Drops, Woodhouse's Ginger, Woodhouse's Spemacefi; all at half the retail price. Fidler, Newbury.
- 1 Pair Brass Scales** on Mahogany Stand, 18s. 1 Cigar Case, 6 compartments. 1 2-gallon Tin Still with Liebig's Condenser 18s. (In good condition.) 18 dozen, 6-oz. Sauce Bottles, 1s. per dozen (stoppered). J. W. Hardman, 141, Woodhouse-lane, Leeds.
- A powerful Magnetic Machine**, complete; a Lereboure View Lens for Plates, 12 x 10; Quarter-plate and Half-plate Lens and Camera; also, a Lereboure Carte Lens and Camera; all complete. A. Ramsbottom, 50, Coupland-street, Manchester.
- C. Julii Cæsaris Amstelodam apud Janssonio Walsbergios**, 1686, 5s. Copland's "Dictionary," 16 parts, 28s. Swediaur, on "Venereal Complaint," London, 1782. James Abernethy on title-page, 7s. "Materia Medica," by John Murray, M.D., 2 vols., 5th edition, 4s. Edinburgh, 1828. Fisher, Bank-street, Carlisle.
- Smith's "Dental Anatomy and Surgery, 1871,"** 4s. Mohr and Redwood's "Practical Pharmacy," 6s. 6d. Pereira's "Selecta & Prescriptis," 3s. 6d. British Pharmacopœia 1864, 2s. 6d. Royle's "Materia Medica," 6s. 6d. Syme's "Principles of Surgery," 5s. "Chemicus," Mr. Malcom, 18, Frederick-street, Edinburgh.
- Two dozen Chevalier's Hair Wash**, 24s. A £3 3s. Ashton and Parson's Homœopathic Show Case, with medicines complete, £2 2s. Benthams' "British Flora," new edition, 6s. Royle's "Materia Medica," 5s. Bentley's Botany, 5s. Brande and Taylor's "Chemistry," 6s. Squire's "Companion," 6th edition, 6s. Address, J.K., 148, New Chester-road, Tranmere, Birkenhead.
- Two Cornish Boilers**, 20 ft. 6 in. by 4 ft. 6 in., flue 2 ft. 6 in. diameter; fitted with glass water-gauges, safety-valves. Bitten's Patent Direct Acting Water Indicators. Feed-cocks, Junction-valves, Dampers, improved Furnace Doors, and Check-valve, etc. Can be seen working in London. For further particulars, apply to Frederick Edwards, 16, Bishopsgate-street Within, London.



quantity 20-oz. gold-labelled N. M. Bottles; 20-oz. ditto ditto W. M.; 6-oz. ditto ditto N. M.; 6-oz. ditto ditto, W. M. 1 dozen 2 lb. Blue Covered Jars; 9 lb. ditto ditto. Counter Dispensing Case, Desk, Mortar, Pill Machine, Counter Scales, Dispensing Scales, and Sundries. To be sold cheap. Globes, Cylinders, &c. Address, M. Field, Whitmore Reans, Wolverhampton.

ur Vulcanizers, complete, [with Thermometers, to hold Four Flasks; Gasometer; Four Wash Bottles. One Flask, Wood Case, Burners, &c., for manufacturing Nitrous Oxide Gas; great quantity of Flasks, Sealing Instruments, Stopping Instruments, &c.; Sets of Forceps, in leather pouch, new, will be sold cheap. Address, J. G., 14, Netherthorpe-street, Sheffield.

horizontal high-pressure and Condensing Engine, built by Barrett, Exall, and Andrews, Reading; cylinder 13½ in. diameter, stroke 19½ in.; fitted with air and feed pumps, variable expansion gear, governor balls, fly-wheel and pet cocks, &c. One on same principle, built 1867; cylinder 10 in. diameter, stroke 19½ in. For further particulars apply to F. Edwards, 16, Bishopsgate-street Within, London.

e of Turner's Homœopathic Medicine Cases, new, for counter, and 4 doz. 6d. bottles of the Medicines, 25s. Eight Tooth Forceps, Key, Mirror, &c. (Mather's best), a Mahogany Case; lowest price 35s. One gross Fish Sauce Bottles, as Harvey's (Lazenby's), 5s. 3, 4, 6, and 8 oz. Dispensing Bottles, equal to new, 6s. per gross. A great variety of Drugs and Sundries. Stamp for list. "Chemist," 9, Pinder-street, Hulme, Manchester.

o Six-gallon Carboys, Cut Spiral Stoppers and Mahogany Circular Stands. Perfect, for 40s. Handsome Plate-glass, Mahogany Case, 4 ft. long, 2 ft. 5 in. high, 5 in. deep; 3 doors. Six dozen Stopped Shop Rounds, labelled, various sizes, wide and narrow mouth. Glass Tooth Powder Jars, 9 inches high, gold shield labels, tin covers, red and gold. Brass Scales, as Maw's Fig. 1. Chemist, 1, Madeira-place, Torquay.

ogony Homœopathic Medicine Chest, adapted to any of the larger "Guides," contains 72 Bottles, Pilules or Globules, and 6 × 2 oz. Mother Tinctures. Filled with medicines, 50s. Bottles and Case, only 25s. Mahogany Case with 55 × 1 oz. bottles, 18s.; if filled with tinctures or pilules, 40s. Neither of these cases have been in use. Handsomely finished. Offered at about half trade price. Iron Mortar, 2 gallons, 10s. 1 cwt. Sem Fœnugree, 12s. Good and clean. Five gross 2 oz. Isinglass Boxes, blue with white lining, at 5s. gross. J. Floyd, Bury St. Edmunds.

#### WANTED.

1 English Bees' Wax; also an Electric Bell. 56/601.

ira's "Selecta," Garrod's "Materia Medica." 26/601.

ed States' "Dispensatory." Edition and price. 42/601.

s Pillar Dispensing Scales, in good condition. G. Morgan, Chemist, Redditch.

sh Pharmacopœia, last edition; Bentley's "Botany." 45/601.

light Magic Lantern, single or for Dissolving Views. Walker, chemist, Maidenhead.

eld's, Fowne's, or any similar "Chemistry." F. Curtis, 13, Cornhill, Dorchester.

pratt's "Chemistry," complete, in good condition. 34/601.

pratt's "Chemistry." State if bound or in numbers. Ellis Lord, Rochdale.

's "Pharmacologia." State price, &c., to "Pharmacist," 51, Gillygate, York.

s of Drawers, Glass Cases, Bottles, Tinct. Press, Counter Scales, &c. Particulars and price to G. Briggs, Chemist, Goole.

or Bell Metal Mortar, bell shape, in good condition. o hold from four to eight pints. Taylor, Chemist, Droitwich

An Evans and Lescher's Materia Medica Cabinet. Must be cheap. A. Wheatly, 3, High-street, Stratford-on-Avon.

Liebig's Letters on "Theoretical and Practical Agriculture." Small Counter Desk, Polariscopes, Spectroscope. Thos. Buck, Chelmsford.

Small Pindar's Pill Machine, 4-grain, and Piping Press; also a Copying Press. Must be good as new. Exchange or cash. Jenkinson, Chemist, Sheffield.

A good Chemical Balance in Glass Case (Oertling's preferred) with Weights in Grains and Grammes. State whose make, how long in use, and lowest price. 36/601.

Hamilton's "Interlineal Cæsar;" "Interlineal Histoire de Charles XII.;" Bentley's "Botany," latest edition; Squire's "Companion," latest edition. Wright, Haslingden.



THE Alabama claims may now be relegated to the past, Great Britain having made the *amende honorable* for her alleged negligence in a confessedly rather substantial form.

It happens this year that our national income is well able to bear the strain thus put upon it. We are likely to have a surplus of some four millions, a sum which would have gone a long way to lighten the burdens on our small taxpayers. This comfort we must forego; but we should infinitely relish a little special taxation on the property of such gentlemen as Mr. Laird, M.P., and others who, at no personal risk, profited by the American war. Perhaps on the whole, however, the pecuniary sacrifice incurred by the Arbitration award is to a great extent compensated by other considerations. Commerce, freed from a standing incubus, it may be hoped will now have fuller and freer vent. Certainly its operations will no longer be retarded by the caution engendered by the existence of a great international difference. The claims have been urged on the other side with considerable vehemence for some years, and vituperation has, perhaps, been as freely used as argument. However, it will be well now to sink past differences, and Americans generally will, without doubt, concur in this course, especially now that our "regret" has been reduced to the understandable form of £ s. d.

The rate of discount was raised on the 10th inst. from 5 to 6 per cent., making the 5th advance in as many weeks. That this last action of the Bank was absolutely necessary seems doubtful, as compared with the previous week the position was stronger, the reserves being equal to 33 per cent. of the liabilities instead of about 32. The tight condition of the money market induced by this precautionary measure will check speculative transactions very considerably. At drug auctions, on the 10th, purchases were restricted, and speculation very limited, owing to the monetary considerations referred to.

**BARKS.**—Cinchonas have maintained an active appearance. On the 10th inst., of 468 packages, Crown and Grey, about 420 sold; good to fine, 2s. 2d. to 2s. 8d.; middling to fair, 1s. 6d. to 2s. 1d.; ordinary to low middling, 10d. to 1s. 5d.; 17 serons Carthagena sold, fair at 10d. to 11d. Cascarilla has not been wanted, 107 casks being bought in at 31s. to 31s. 6d., sifted 38s. Of 49 bales of Cundurango offered, 4 were taken at 4d. per lb. For Cinnamon, a good demand prevails, and prices are slightly better.

**ALOES.**—Cape have met fair attention, and with moderate supply, prices have stiffened. Barbadoes have also sold well at the supply of Socotrine continues nil. The export de-



mand for Cardamoms has somewhat abated, and being well offered, a decrease in value has resulted. Malabars keep pretty firm, however, at 7s. 9d. to 7s. 10d. for good short clipped.

**CAMPHOR.**—There is no change for the better in the face of heavy stocks, and restricted export demand. The market was adversely affected last month by the action of one of the chief holders, who forced off 1,500 cases of China, at 75s. to 77s. 6d., chiefly the former price. Stock up to 30th ult. 10,695 cases, against 8,793 last year.

Holders of Bucha leaves remain firm, although the stock is large, and demand moderate; longs quoted at 10d. to 1s. per lb. The large supply of Patchouli leaf brought forward on the 10th failed to draw, the whole, consisting of 347 bales, being bought in at 6d. or withdrawn. There is plenty of Ergot of Rye in the market just now, and it may be bought to advantage. Guinea Grains made a further retrograde movement, and may now be quoted at 25s. to 25s. 6d. Musk maintains previous value, at auction 14 caddies, Tonquin sold, good 39s. to 40s., good fair 35s. 6 tons Nepaul bought at 60s.

**VANILLOES.**—On the 3rd inst. 53 lbs. Mauritius new crop were nearly all sold at and after the sale, at 10s. to 15s. per lb. below previous extreme quotations. Since then a partial recovery has been established.

**HOPS.**—This year's crop is reported very favourably of as one of the largest on record. On the Continent, whilst it has been exceeded in quantity in previous years, the quality is exceptionally choice.

**ESSENTIAL OILS.**—Aniseed maintains an anomalous position. At sales on the 10th 26 cases were offered, of which 11 cases sold at 10s. 8d. to 10s. 11d., subsequently at 10s. up to 10s. 7d., and after the sale more was disposed of at 11s.; compared with last month's prices the drop is considerable. Cassia, owing to scarcity of supply, is firmer, 5 cases sold at 6s. 10d., the first lot 6s. 11d. This parcel was of 1862 import, and contrary to established usage, was sold at reweights. Citronelle and Lemon Grass are not very active, Nutmeg is slightly dearer, and Cinnamon of really fine quality still very searee.

**GUMS.**—Assafoetida is still being offered, and the value steadily recedes. Of 173 cases 113 sold on the 10th, low middling to fair 42s. to 72s. 6d., ordinary to inferior 22s. 6d. to 28s. Gamboge—of 33 cases 23 first class sea damaged sold, fine bright pipe, partly run, £15 to £15 5s., fair £12 to £13 10s. ordinary rough £10 17s. 6d. to £11; fine bright sound pipe was bought in at £16. For Arabia more enquiry has prevailed, and prices are somewhat better. Olibanum has been selling slowly, but Benjamin has been made the medium of some good business, especially for Sumatra. Myrrh rather quiet, 20 cases sold, fair sorts, chiefly small, at £5, pickings £7.

**ROOTS.**—China Rhubarb has been but moderately offered, and rather better terms are obtainable. Of 44 cases put up on the 10th, 10 sold, good with a small part dark at 3s. 3d. high-dried greyish fracture partly small at 1s. 4d. Colombo not in much request, and the same applies to Orris. Senega is firmer, Ipecacuanha easier, and both Jamaica and Honduras Sarsaparillas have sold well. Two bales of Gravel root were introduced at Sales as a novelty, and bought in at 5d. per pound. This article seems to have hailed from Bremen, but whence it first originated did not transpire. However, it is satisfactory to know that it cures everything, and that unlimited supplies will be forthcoming if needed.

**DRYSALTERIES.**—**SHELLAC.**—The improved appearance noted last month is fully sustained, and a good demand has prevailed for all descriptions, second orange and lower kinds being in special favour. Calcutta statements, which must be received with caution, represent business in the

article as brought to a standstill there through the absence of stock. On like authority, we hear that there is a probability of exceedingly small supplies for some time to come, the scarcity of Sticklac being an ascertained fact. On account of this scarcity, all the small factories are said to be already closed.

**COCHINEAL.**—At regular sales held on the 2nd inst., a total of 1,337 bags was offered. The demand was not equal to the supply, and 856 bags found buyers at about previous prices. Firmer rates have been paid for China galls in the absence of any very recent heavy arrivals.

**SPICES.**—**NUZMEGS.**—A larger supply, amounting to 604 packages, was offered on the 3rd inst. than for some time past, and with a good demand the greater part was disposed of. The supply consisted chiefly of common qualities and second-hand parcels. Mace, which realised an advance of 2d. to 3d. per lb. early in the month, has again receded. From New York the news comes that considerable sales have been effected for export to Europe and this country.

**PEPPER.**—The market is decidedly depressed, and at auction 4,436 bags went off flatly, nearly the whole being bought in. White also dull of sale. Zanzibar cloves still maintain a strong position. Of 560 bales, 150 dark, sold at 6½d. to 7d. Penang is also fetching full rates. Ginger.—The very common qualities of Jamaica lately offered have met a fair demand at steady prices. Of Cochin 445 cases put forward, and the bulk, consisting mostly of second-hand parcels, import 1871, chiefly sold at low rates. Privately, about 250 bags Bengal have been sold at 39s., also 1,200 bags African just arrived, and 45 now wanted.

**CHEMICALS.**—Trade has been pretty brisk throughout the month, and as fall contracts are expiring, exporters show some eagerness to enter into forward arrangements. Manufacturers, however, are not anxious to meet such disposition, as the enhanced cost of production must continue to push prices forward. **ACIDS.**—Citric remains firm at 4s. 5d., and Tartaric also maintains a strong position. English fetches 1s. 8d., although some parcels have left second hands at a shade under this figure. Oxalic rather dull, and 11½d. has been accepted. Bleaching Powder is dull, and quoted at 13s. 6d. to 13s. 9d. landed. Soda Crystals have been selling freely despite increased production, and Ash has likewise met fair attention. Bicarbonate firm at 18s. Chlorate of Potash stands at 1s. 10½d. to 1s. 11d., and a good quantity has been disposed of at 1s. 9d. up to the end of the year. Cream of Tartar remains steady at 110s., and will probably see a stiffer price. Quinine still firm at 8s. For Sulphate of Ammonia but little demand has latterly existed. Sulphate of Copper rather easier. China Vermilion being less abundant, the sales concluded are at firm rates, good genuine privately 3s. 10d. to 4s. per lb. Mercury, which was quoted at 13½, has become rather unsettled, and 12½ 15s. is now the figure.

**OILS.**—Linseed, after further declining to 35½ 2s. 6d. on the spot here, has since improved to 35½ 15s. 0d. Prices of Brown Rapo have fluctuated and declined on the spot from 40½ to 39½, but now quoted 39½ to 39½ 5s. Refined Cotton has again failed to attract attention, and there are now sellers on the spot here at 32½ 10s. Palm still searee. The demand for Olive has continued to be confined to the low qualities, 110 tons Tunis having been sold at between 42½ 10s. and 43½, and 10 tons Mogador at 42½ 5s. Cod is steady at 39½ 10s. to 40½ 100 tons East Indian Fish have been sold during the week at 28½.

**TURPENTINE.**—The market for spirits has been dull and declining, and sales of American have taken place at from 42s. down to 40s. 3d. Since then, however, a recovery has occurred, and 42s. is now the figure.



## Monthly Price Current.

prices quoted in the following list are those actually obtained in financing-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.	1872.		1871.	
	s. d.	s. d.	s. d.	s. d.
Acetic .....per lb.	0 4½	to 0 0	0 4	to 0 0
Citric .....per lb.	4 5	.. 4 5½	3 0	.. 2 0
Hydrochlor. ....per cwt	4 0	.. 7 0	4 0	.. 7 0
Nitric .....per lb.	0 5	.. 0 5½	0 5	.. 0 5½
Oxalic ..... "	0 11½	.. 1 0	0 11½	.. 0 0
Sulphuric ..... "	0 0½	.. 9 1	0 0½	.. 0 1
Tartaric crystal .. "	1 7½	.. 1 8	1 5½	.. 0 6
powdered .. "	1 8½	.. 0 0	1 5½	.. 1 6
AMMONIA ore.....per ton	270 0	.. 290 0	240 0	.. 260 0
crude ..per cwt	38 0	.. 40 0	34 0	.. 36 0
regulus.. "	0 0	.. 0 0	45 6	.. 46 6
star .. "	72 0	.. 75 0	46 6	.. 47 6
BENIC, lump .. "	18 6	.. 0 0	15 6	.. 16 0
powder... "	8 3	.. 8 6	6 9	.. 7 3
LMSTONE, rough ..per ton	140 0	.. 145 0	160 0	.. 0 0
roll ....per cwt	10 0	.. 10 3	10 0	.. 10 6
flour.... "	12 3	.. 13 0	12 0	.. 13 0
INE, dry .....per oz.	1 8	.. 1 10	2 0	.. 0 0
RY BLACK, dry..per cwt.	8 6	.. 0 0	0 0	.. 0 0
GNESIA, calcined..per lb.	1 6	.. 0 0	1 1	.. 0 0
CURV.....per bottle	255 0	.. 0 0	205 0	.. 0 0
TIUM, red .....per cwt.	21 3	.. 21 6	21 0	.. 21 6
orange .. "	31 6	.. 32 0	32 0	.. 33 0
ECIPITATE, red ....per lb.	4 3	.. 0 0	3 7	.. 0 0
white .. "	4 2	.. 0 0	3 6	.. 0 0
SSIAN BLUE .. "	0 0	.. 0 0	0 0	.. 0 0
LS—				
alum .....per ton	165 0	.. 170 0	140 0	.. 150 0
powder .... "	175 0	.. 180 0	145 0	.. 150 0
AMMONIA:				
Carbonate .....per lb.	0 7	.. 0 7½	0 7	.. 0 7½
Hydrochlorate, crude,				
white.....per ton	640 0	.. 0 0	520 0	.. 560 0
British (see Sal Ammoniac)				
Sulphate .....per ton	420 0	.. 425 0	440 0	.. 460 0
Argol, Cape.....per cwt	65 0	.. 90 0	60 0	.. 90 0
France .. "	0 0	.. 0 0	0 0	.. 0 0
Oporto, red .. "	24 0	.. 27 0	22 0	.. 24 0
Sicily .. "	0 0	.. 0 0	0 0	.. 0 0
Naples, white .. "	0 0	.. 0 0	0 0	.. 0 0
Florence, white .. "	0 0	.. 0 0	0 0	.. 0 0
red .. "	0 0	.. 0 0	0 0	.. 0 0
ashes (see Potash and Soda)				
leaching powd...per cwt.	13 6	.. 13 9	14 9	.. 0 0
rax, crude .... "	50 0	.. 76 0	47 0	.. 65 0
(Tincal) .. "	47 0	.. 65 0	45 0	.. 60 0
British refnd., .. "	100 0	.. 0 0	95 0	.. 0 0
omel .....per lb.	3 10	.. 0 0	3 5	.. 0 0
ulphate .....per cwt.	32 6	.. 33 0	25 0	.. 26 0
oppers, green ..per ton	60 0	.. 62 10	55 0	.. 60 0
rosiveSublimate..p.lb.	3 3	.. 0 0	2 9	.. 0 0
Tartar, French, p.cwt.	110 0	.. 0 0	92 6	.. 0 0
Venetian grey .. "	107 6	.. 0 0	95 0	.. 0 0
brown .. "	97 6	.. 98 0	87 6	.. 95 0
om Salts .....per cwt.	5 9	.. 6 3	6 0	.. 7 0
uber Salts .... "	7 6	.. 0 0	4 6	.. 6 0
ce:				
etate, white, per cwt.	14 0	.. 22 6	12 6	.. 23 0
nesia: Carbouate .. "	42 6	.. 45 0	42 6	.. 0 0
ash:				
chromato ....per lb.	0 8½	.. 0 0	0 10	.. 0 0
arbonate:				
Potashes, Canada, 1st				
sort .....per cwt.	39 6	.. 40 0	36 0	.. 36 9
Pearlashes, Canada, 1st				
sort .....per cwt.	54 0	.. 55 0	46 0	.. 0 0
lorato .....per lb.	1 10½	.. 1 11	1 5½	.. 0 0
ussiate .....per lb.	1 5½	.. 1 6	1 7½	.. 0 0
red .. "	3 1	.. 0 0	2 6	.. 2 10
trate (see Argol and Cream of Tartar)				
esium:				
loride .....per cwt.	9 9	.. 10 0	10 6	.. 11 0
lide.....per lb.	32 0	.. 0 0	28 0	.. 0 0
ine:				
phate, British, in				
bottles .....per oz.	8 0	.. 0 0	7 9	.. 0 0
phate, French .. "	8 0	.. 0 0	7 6	.. 0 0
ectos .....per lb.	1 3½	.. 0 0	1 2	.. 0 0
mmoniac, Brit. cwt.	48 0	.. 49 0	43 0	.. 44 0
etre:				
agal, 6 per cent. or				
nder .....per cwt.	28 0	.. 29 0	31 3	.. 31 9
agal, ovor ..per cent.				
per cwt.	26 6	.. 27 6	30 0	.. 31 0
irav..... "	0 0	.. 0 0	0 0	.. 0 0
ob & Kurrachcop.ct.	0 0	.. 0 0	0 0	.. 0 0
ocean..... "	0 0	.. 0 0	0 0	.. 0 0
ish, refined .. "	31 9	.. 32 6	34 0	.. 35 6
Bicarbonate, p.cwt.	18 0	.. 0 0	14 0	.. 0 0
onate:				
da Ash.....per deg.	0 3½	.. 0 0	0 2½	.. 0 2½
da Crystals per ton	150 0	.. 152 6	100 0	.. 0 0
osulphite..per cwt	15 6	.. 16 0	14 0	.. 16 0

Soda:	1872.		1871.	
	s. d.	s. d.	s. d.	s. d.
Nitrate .....per cwt.	14 0	to 14 3	16 9	to 17 0
SUGAR OF LEAD, White, cwt.	44 0	.. 0 0	39 0	.. 40 0
Brown .. "	30 0	.. 0 0	20 0	.. 28 0
SULPHUR (see Brimstone)				
VERDIGRIS .....per b.	1 1	.. 1 3	1 0	.. 1 2
VERMILION, English..per lb.	3 3	.. 3 10	3 4	.. 0 0
China.... "	3 7	.. 4 0	3 6	.. 0 0

## DRUGS.

ALGES, Hepatic....per cwt.	100 0	.. 240 0	70 0	.. 220 0
Socotrine .. "	160 0	.. 420 0	120 0	.. 280 0
Capo, good.. "	30 0	.. 32 6	29 0	.. 36 0
Inferior .. "	25 0	.. 29 0	22 0	.. 28 0
Barbadoos .. "	70 0	.. 200 0	70 0	.. 210 0
AMBERGRIS, grey.....oz.	20 0	.. 25 0	25 0	.. 30 0
BALSAM —				
Canada .....per lb.	1 9	.. 0 0	1 4	.. 0 0
Capivi .. "	1 10	.. 2 1	1 10½	.. 1 11
Peru .. "	9 6	.. 0 0	9 0	.. 0 0
Tolu .. "	1 9	.. 1 11	1 11	.. 2 0
BARKS—				
Canella alba ....per cwt.	15 0	.. 25 0	15 0	.. 25 0
Cascarilla..... "	26 0	.. 37 0	20 0	.. 37 0
Peru, crown & grey per lb.	1 4	.. 2 8	1 3	.. 2 10
Calisaya, flat .. "	3 4	.. 4 0	3 2	.. 3 4
quill .. "	3 6	.. 4 3	3 2	.. 3 4
Cartagena .. "	0 10	.. 2 0	0 10	.. 1 8
Pitayo .. "	0 6	.. 1 8	0 10	.. 1 6
Red .. "	1 10	.. 6 0	2 0	.. 7 3
Bueha Leaves .. "	0 3½	.. 1 0	0 4	.. 1 0
CAMPHOR, China..per cwt.	75 0	.. 77 6	67 6	.. 70 0
Japan .. "	78 0	.. 80 0	75 0	.. 0 0
Refin Eng. per lb.	1 3½	.. 1 3½	1 2½	.. 1 3
CANTHARIDES .. "	5 7	.. 6 0	5 0	.. 0 0
CHAMONILE FLOWERS p.cwt	45 0	.. 80 0	45 0	.. 70 0
CASTOREUM .....per lb.	3 0	.. 30 0	3 0	.. 30 0
DRAGON'S BLOON, lp. p.cwt.	100 0	.. 220 0	100 0	.. 210 0

## FRUITS AND SEEDS (see also Seeds and Spices)

Anise, China Star pr cwt.	107 6	.. 115 0	127 6	.. 130 0
German, &c. "	20 0	.. 36 0	41 0	.. 47 0
Beans, Tonquin ..per lb.	1 4	.. 1 8	0 9	.. 1 6
Cardamoms, Malabar				
good .. "	6 6	.. 7 10	9 6	.. 10 0
inferior .. "	4 5	.. 6 0	7 6	.. 9 9
Madras .. "	2 6	.. 6 0	3 6	.. 9 6
Ceylon .. "	4 4	.. 9 0	3 0	.. 3 4
Cassia Fistula ..per cwt.	11 0	.. 22 0	12 0	.. 30 0
Castor Seeds .. "	5 0	.. 10 0	10 0	.. 12 0
Cocculus Indicus .. "	13 0	.. 14 0	17 0	.. 18 0
Colocynth, apple..per lb.	0 3	.. 0 0	0 3	.. 0 6
Croton Seeds ..per cwt.	63 0	.. 67 0	70 0	.. 75 0
Cubebs .. "	20 0	.. 30 0	23 0	.. 26 0
Cummin .. "	25 0	.. 30 0	48 0	.. 55 0
Dividivi .. "	12 0	.. 15 0	12 0	.. 14 6
Fenugreek..... "	12 0	.. 22 0	13 0	.. 22 0
Guinea Grains .. "	25 0	.. 30 0	24 0	.. 26 6
Juniper Berries .. "	10 0	.. 10 6	15 0	.. 18 0
Myrobalans .... "	8 6	.. 13 0	12 6	.. 17 0
Nux Vomica..... "	9 0	.. 13 0	10 6	.. 14 0
Tamarinds, East India, "	5 0	.. 20 0	2 0	.. 12 0
West India, new .. "	20 0	.. 38 0	10 3	.. 27 6
Vailla, large ....per lb.	55 0	.. 74 0	30 0	.. 42 6
inferior .. "	20 0	.. 54 0	12 0	.. 28 0
Wormseed ..per cwt.	0 6	.. 0 0	0 0	.. 0 0
GINGER, Preserved, in bond				
(duty 1d. per lb.) porlb.	0 7	.. 0 10	0 6	.. 0 10

## Gums (see separate list)

HONEY, Chili....per cwt.	28 0	.. 42 0	45 0	.. 47 0
Cuba .. "	35 0	.. 50 0	30 0	.. 45 0
Jamaica .. "	30 0	.. 50 0	40 0	.. 65 0
IRECACUANHA .....per lb.	4 6	.. 4 8	4 9	.. 5 2
ISINGLASS, Brazil.. "	2 6	.. 4 7	2 6	.. 4 6
Tongoo sort .. "	3 4	.. 5 1	3 4	.. 5 4
East India .. "	1 0	.. 4 0	1 6	.. 4 0
West India .. "	4 0	.. 4 5	4 0	.. 4 4
Russ. long staple .. "	8 0	.. 12 0	0 0	.. 9 6
leaf .. "	3 6	.. 7 6	3 6	.. 6 6
Simovia .. "	2 6	.. 4 0	2 0	.. 3 6
JALAP, good .. "	1 3	.. 2 0	1 6	.. 3 0
infer. & stems .. "	0 0	.. 1 8	0 6	.. 1 5
LEMNOR JUICE ....per degree	0 1	.. 0 1½	0 1	.. 0 2
LIQUORICE, Spanish per cwt.	35 0	.. 37 0	35 0	.. 37 0
Italian .. "	40 0	.. 60 0	40 0	.. 60 0
MANNA, flaky ....per lb.	3 3	.. 3 6	3 6	.. 4 0
small..... "	1 9	.. 2 0	2 0	.. 2 2
MUSK, Pod .....per oz.	19 0	.. 45 0	21 0	.. 37 6
Grain .. "	59 6	.. 60 0	0 0	.. 0 0

## OILS (see also separate List)

Almond, expressed per lb.	1 1	.. 0 0	1 4	.. 0 0
Castor, 1st pale .... "	0 5½	.. 0 0	0 5	.. 0 5½
second .. "	0 4½	.. 0 5	0 4½	.. 0 4½
infer. & dark .. "	0 4½	.. 0 4½	0 4½	.. 0 4½
Bombay (in casks) .. "	0 4½	.. 0 4½	0 4½	.. 0 4½
Cod Liver .....per gall.	4 6	.. 6 3	5 0	.. 0 0
Croton.....per oz.	0 3	.. 0 4	0 3½	.. 0 4½
Essential Oils:				
Almond .....per lb.	35 0	.. 0 0	42 0	.. 0 0
Anise-seed .....per lb.	10 0	.. 11 0	10 3	.. 10 6
Bay .....per cwt.	65 0	.. 70 0	65 0	.. 70 0
Bergamot .....per lb.	8 0	.. 19 0	8 0	.. 11 0
Cajuput, (in bond) per oz.	0 1½	.. 0 3	0 1½	.. 0 3
Caraway .....per lb.	5 6	.. 6 3	5 6	.. 6 3
Cassia .. "	6 10	.. 0 0	4 3	.. 0 0
Cinnamon .....per oz.	1 0	.. 7 0	0 10	.. 3 0
Cinamon-leaf.. "	0 2	.. 0 5	0 2	.. 0 4½



1872.				1871.				1872.				1871.							
Essential Oils, continued:—				s. d.				s. d.				Oils, continued:—				s. d.			
Citronelle.....per oz.	0	2½	to 0 0	0	1½	to 0 1½		COD.....per tun	39	10	to 40 0	33	0	to 33 10					
fine.....	4	0	0 0	0	2½	0 0		WHALE, South Sea, pale	38	0	0 0	32	10	0 0					
Clove.....per lb.	4	0	0 0	2	4	0 0		yellow ..	37	0	0 0	32	0	0 0					
Juniper .....	1	0	2 0	1	0	2 0		brown ..	30	0	32 10	0	0	0 0					
Lavender.....	8	6	6 0	5	6	6 0		East India, Fish	28	0	0 0	28	0	0 0					
Lemon.....	10	0	18 0	5	0	9 6		OLIVE, Galipoli .....	46	10	47 0	51	0	0 0					
Lemongrass .....per oz.	0	5	0 5½	0	2½	0 2½		Triesto .....	45	10	46 0	49	0	50 0					
Neroli .....	0	5	0 6	0	5	0 0		Levant .....	43	0	0 0	48	0	0 0					
Nutmeg .....	0	7	0 9	0	4½	0 0½		Mogador.....	42	0	42 5	47	10	48 0					
Orange.....per lb.	7	0	8 0	5	0	7 0		Spanish .....	45	0	0 0	50	0	0 0					
Otto of Roses.....per oz.	12	0	21 0	12	0	21 0		Sicily .....	45	0	0 0	49	10	0 0					
Patchouli .....	4	0	0 0	3	0	0 0		COCOANUT, Cochinn. per ton	36	0	39 0	51	0	0 0					
Peppermint:								Ceylon ..	35	10	0 0	38	0	38 10					
American .....per lb.	13	0	14 0	12	6	14 0		Sydney ..	31	0	35 10	30	0	39 10					
English .....	30	0	33 0	33	0	34 0		GROUND NUT AND GINGEOLE:											
Rosemary .....	1	9	2 0	1	9	2 0		Bombay .....	0	0	0 0	0	0	0 0					
Sassafras .....	3	0	3 6	3	0	3 6		Madras .....	25	10	36 0	46	0	0 0					
Spearmint .....	4	0	16 0	4	0	16 0		PALM, fine .....	39	10	40 0	37	0	0 0					
Thyme.....	1	10	2 0	1	10	2 0		LINSEED .....	35	10	35 15	33	10	33 10					
Mace, expressed .. per oz.	0	1½	0 3	0	1½	0 3		RAPESEED, English, pale ..	41	0	41 5	46	10	47 0					
OPIMUM, Turkey.....per lb.	21	0	24 0	19	0	20 0		brown.....	39	0	39 5	44	15	45 0					
inferior .....	12	0	20 0	12	0	18 0		Foreign pale.....	42	0	42 10	50	0	0 0					
QUASSIA (bitter wood) per ton	35	0	90 0	60	0	70 0		brown.....	40	0	0 0	45	0	0 0					
RHUBARB, China, good and								COTTONSEED .....	32	10	0 0	33	5	34 0					
fine .....	2	3	6 0	2	0	6 4		LARD.....	44	0	46 0	50	0	55 0					
Good, mid. to ord.	0	3	2 0	0	4	1 10		TALLOW .....	36	0	0 0	35	0	0 0					
Dutch trimmed ..	9	0	9 6	0	0	0 0		TURPENTINE, American, cks.	42	0	0 0	47	0	0 0					
Russian .....	0	0	0 0	0	0	0 0		PETROLEUM, Crude .....	0	0	0 0	0	0	0 0					
ROOTS—Calumba.....per cwt.	23	0	40 0	25	0	42 0		s. d. ....	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.					
China .....	23	0	27 0	23	0	25 0		refined, per gall.	1	6	1 6½	1	6½	0 0					
Galangal .....	16	0	19 0	17	0	20 0		Spirit ..	1	2½	1 3	0	11	0 10					
Gentian .....	20	0	22 0	27	0	30 0		SEEDS.											
Hellebore .....	30	0	32 0	30	0	35 0		CANARY .....	43	0	52 0	52	0	58 0					
Orris .....	40	0	70 0	65	0	80 0		CARAWAY, English per cwt.	40	0	44 0	0	0	0 0					
Pellitory .....	30	0	38 0	53	0	60 0		German, &c.....	29	0	36 0	0	0	0 0					
Pink.....per lb.	0	9	1 3	0	9	1 3		CORIANDEER .....	20	0	25 0	0	0	0 0					
Rhatany .....	0	4	0 11	0	4	0 11		HEMP .....	40	0	46 0	40	0	44 0					
Seneca.....	4	6	0 0	5	6	5 9		LINSEED, English per qr.	60	0	67 0	0	0	0 0					
Snake .....	1	1	1 2	1	4	1 6		Black Sea & Azof	61	6	62 0	61	0	0 0					
SAFFRON, Spanish ..	27	0	36 0	35	0	44 0		Calcutta ..	63	6	63 9	63	6	0 0					
SALEP .....	160	0	180 0	160	0	210 0		Bombay ..	64	6	0 0	64	0	0 0					
SARSAPARILLA, Lima per lb.	0	7½	0 9	0	6	0 7½		St. Petersburg.	59	0	60 6	59	0	0 0					
Para .....	1	2	1 3	1	0	1 3		Mustard, brown. per bshl.	13	0	16 0	0	0	0 0					
Honduras .....	1	2	1 8½	1	2	1 7½		white.....	8	0	9 6	9	0	9 6					
Jamaica .....	1	6	2 6	1	7	3 0		POPPY, East India per qr.	61	0	62 0	60	0	61 0					
SASSAFRAS .....	0	0	0 0	0	0	0 0		SPICES.											
SCAMMONY, Virgin .. per lb.	26	0	32 0	26	0	32 0		CASSIA LIONEA ....per cwt.	35	0	100 0	108	0	121 0					
second & ordinary	10	0	25 0	10	0	25 0		Vera .....	33	0	70 0	42	0	80 0					
SENNA, Bombay ....	0	1	0 4	0	3½	0 6		Buds .....	125	0	130 0	125	0	135 0					
Tinnivelly .....	0	1½	1 1	0	3½	1 6		CINNAMON, Ceylon,											
Alexandria.....	0	2½	2 0	0	3½	1 7		1st quality .....per lb.	2	8	3 9	2	8	3 8					
SPERMACETE, refined..	1	6	0 0	1	6	1 7		2nd do. ....	2	1	3 4	2	0	3 6					
American .....	1	2	1 3	1	2	1 3		3rd do. ....	1	3	2 11	1	10	3 0					
SQUILL.....	0	1	0 2½	0	1½	0 2		Tellicherry .....	2	9	3 2	2	7	3 0					
GUMS.								CLOVES, Penang....	1	4½	1 6½	1	4½	1 6					
AMMONIAC drop ..per cwt.	140	0	200 0	80	0	150 0		Amboyna.....	0	6½	0 11	0	4½	0 10					
lump .....	80	0	130 0	55	0	75 0		Zanzibar .....	0	7	0 7½	0	3	0 0					
ANIMI, fine washed	280	0	330 0	280	0	335 0		GINSENG, Jam., fine per cwt.	100	0	200 0	90	0	180 0					
bold scraped .....	220	0	230 0	210	0	270 0		Ord. to good ..	50	0	90 0	42	0	87 0					
sorts .....	140	0	230 0	140	0	230 0		African.....	44	0	45 0	33	0	34 0					
dark .....	90	0	130 0	85	0	130 0		Bengal .....	39	0	0 0	33	0	34 0					
ARABIC, E. I., fine								Malabar .....	9	0	0 0	33	6	35 0					
pale picked .....	70	0	84 0	66	0	74 0		Cochin .....	45	0	125 0	45	0	130 0					
sits, gd. to fin	60	0	69 0	52	0	65 0		PEPPER, Blk, Malabar, per lb.	0	7½	0 7½	0	7	0 7½					
garblings.....	23	0	50 0	22	0	40 0		Singapore.....	0	6½	0 0	0	7½	0 0					
TURKEY, pick. gd to fin.	160	0	230 0	160	0	200 0		White, Tellicherry	0	0	0 0	1	0	1 6					
second & inf. ....	85	0	150 0	85	0	155 0		Cayenne .....	1	6	1 11	0	9	1 6					
in sorts .....	65	0	80 0	65	0	80 0		MACE, 1st quality .. per lb.	4	2	4 8	4	6	4 10					
Gedda.....	30	0	42 0	33	0	44 0		2nd and inferior..	3	8	4 1	4	0	4 4					
BARBARY, white ..	50	0	55 0	0	0	0 0		NUTMEOS, 78 to 60 lb.	3	6	4 2	3	5	4 4					
brown .....	36	0	44 0	44	0	46 0		90 to 80 ..	3	3	3 5	3	2	3 4					
AUSTRALIAN .....	29	0	45 0	21	0	42 6		132 to 95 ..	2	9	3 2	2	8	3 10					
ASSAFETIDA, com. to gd	42	0	100 0	30	0	100 0		VARIOUS PRODUCTS.											
BENJAMIN, 1st qual.	200	0	520 0	160	0	400 0		COCHINEAL—											
2nd .....	150	0	210 0	150	0	210 0		Honduras, black ..per lb.	2	5	3 3	2	6	3 4					
3rd .....	70	0	90 0	40	0	85 0		" silver ..	2	4	2 9	2	5	2 9					
COPAL, Angola red	140	0	147 6	127	0	180 0		" pasty ..	2	0	2 2	2	4	0 0					
Benguela .....	110	0	115 0	05	0	110 0		Mexican, black ..	2	5	2 8	2	5	2 9					
Sierra Leone.....per lb.	0	3½	0 11	0	3	0 10½		" silver ..	2	2	2 3	2	4	0 0					
Manilla .....	17	0	30 0	17	0	38 0		Teneriffe, black....	2	4	3 9	2	5	4 0					
DAMMAR, pale .....	55	0	00 0	62	0	67 0		" silver.....	2	3	2 6	2	5½	2 3					
EUPHORBUM .....	15	0	17 0																







